ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY

FOR SESSION 1897-98.

WITH

EXAMINATION PAPERS

FOR SESSION 1896-97.

MONTREAL:
PRINTED BY JOHN LOVELL & SON,
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1897.

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ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL,
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821, AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION 1897-98

Montreal :

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NOTICE.

THE JUNE ENTRANCE EXAMINATIONS for 1898 will begin on MONDAY, MAY 30th, and be continued through the first week of June.

The *List of Graduates* corrected to June, 1895, and the *Examination Papers* (price 75 cents) for each Session, are published separately, and may be obtained on application to the Secretary.

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By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the Statutes framed by the Board of Governors with the approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties in McGill College and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational, and while all possible attention will be given to the character and conduct of Students, no interference with their individual views will be sanctioned.

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In the Session 1894-5, special regulations were sanctioned by the Corporation, by which the degree of B.A. can be obtained along with the degree in the Faculty of Medicine or of Applied Science in six years. This is effected by avoiding the duplication of courses in the same subjects or in those which give the same educational training, and by a proper adaptation of the time tables. A certificate of Literate in Arts will be given along with the degree in either Faculty to candidates who have completed two years in Arts before entering the Professional Faculty.

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THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, Electrical Engineering, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions of nine months each, and leads to the Degree of M.D., C.M.

THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.—The complete course extends over three Sessions of six months each, and leads to the Degree of D.V.S.

THE FACULTY OF LAW.—.The complete course of law extends over three Sessions of eight months each, and leads to the Degrees of B.C.L. and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms as the students of McGill College.

MORRIN COLLEGE, QUEBEC.—Is affiliated in so far as regards Degrees in Arts and Law. [Detailed information may be obtained from the REV. DONALD MACRAE D.D., Principal.]

ST. FRANCIS COLLEGE, RICHMOND, P.Q.—Is affiliated in so far as regards the Intermediate Examinations in Arts. [Detailed information may be obtained from J. A. DRESSER, B.A., Principal.]

THE STANSTEAD WESLEYAN COLLEGE, STANSTEAD, P.Q.—Is affiliated in so far as regards the Intermediate Examination in Arts. [Detailed information may be obtained from the Rev. C. R. FLANDERS, B.A., Principal.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF CANADA, MONTREAL. Principal, REV. J. HENRY GEORGE, D.D., PH.D, 58 McTavish St.

THE PRESBYTERIAN COLLEGE, MONTREAL, in connection with the Presbyterian Church in Canada. Principal, REV. D. H. MACVICAR, D.D., LL.D., 69 McTavish St.

THE DIOCESAN COLLEGE OF MONTREAL. Principal, ———, 201 University St.

THE WESLEYAN COLLEGE OF MONTREAL. Principal, REV. W. I. SHAW, M.A., LL.D., 228 University St.

(Calendars of the above Colleges and all necessary information may be obtained on application to their Principals.]

IV. McGILL NORMAL SCHOOL.

THE McGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas, and may, on conditions stated in the announcement of the School, enter the classes in the Faculty of Arts for Academy Diplomas and for the Degree of B.A. Principal, S. P. ROBINS, LL.D., 32 Belmont St., Montreal.

V. AFFILIATED HIGH SCHOOLS, ETC.

The Trafalgar Institute for the higher education of women, Simpson St., Montreal, Principal, Miss Grace Fairley. The High School of Montreal, and The Girls' High School of Montreal, Metcalfe St., Principal, Rev. I. Elson Rexford, B.A.

Schools which have prepared successful candidates for A.A. or for matriculation (June, 1897).

Boys' High School, Montreal; Girls' High School, Montreal; Montreal Coll. Inst.; Abingdon School, Montreal; Roslyn Coll., Montreal; Miss Symmers' and Miss Smith's School, Montreal; The Misses Gairdner's School, Montreal; Westmount Academy; Acacia Villa School, Horton Landing, N.S.; Arnold School, Halifax, N.S.; Ashbury House School, Ottawa; Bedford Acad.; Bishop Ridley Coll., St. Catharines; Brockville Coll. Inst.; Clarenceville Model School; Compton Ladies' Coll.; Cookshire Acad.; Danville Acad.; Dufferin School, Brigham, Que.; Dunham Ladies' Coll.; Granby Acad.; Hamilton Coll. Inst.; Huntingdon Acad.; Lennoxville Model School; London Coll. Inst.; Lachute Acad.; Magog Model School; New Westminster High School; Ormstown Model School; Ottawa Coll. Inst.; Pembroke High School; Penobseque School, N.B.; Boys' High School, Quebec; Girls' High School, Quebec; St. Francis Coll. School; Sabrevois Coll.; Sawyerville Model School; Sherbrooke Acad.; Solina School, Solina, Ont.; Stanstead Wesleyan Coll.; Stratford Coll. Inst.; Sutton Acad.; Three Rivers Acad.; Trinity Coll. School, Port Hope, Ont.; Upper Canada Coll.; Victoria Girls' High School, St. John, N.B.; Waterloo Acad.; Williamstown High School.

ACADEMICAL YEAR 1897-98.

SEPTEMBER, 1897.

1 Wednesday	Normal School opens.
2 Thursday	
3 Friday	
4 Saturday	Meeting of Medical Faculty.
5 SUNDAY	
6 Monday	
7 Tuesday	Matriculation in Law. Lectures in Law begin.
8 Wednesday	Meeting of Normal School Com.
9 Thursday	Meeting of Finance Committee.
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	Register opens for Std. in Med.
14 Tuesday	Meeting of Faculty of Arts. College Grounds Committee.
15 Wednesday	Matriculation and Supplemental Examinations (Classics), Exhibition and Scholarship Examinations begin.
16 Thursday	Ex'ns contin'd (Mathematics).
17 Friday	Ex'ns cont'd. (English, Logic, Chemistry and Philosophy.)
18 Saturday	Matriculation in Vet. Sc.
19 SUNDAY	
20 Monday	Examinations continued. (Modern Lang. and Nat. Science) Engineering Building Com.
21 Tuesday	Exhib. and Sch. Ex'ns continued. Lectures in Arts, Med. and App. Sc. begin. Mtgs. Fac. Arts and App. Sc. Introductory Lecture Fac. of Med.
22 Wednesday	Introductory Lec., Fac. Vet. Sc.
23 Thursday	Lectures begin Fac. Vet. Sci.
24 Friday	Meeting of Faculty of Arts.
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	
28 Tuesday	Chem. and Min. Committee.
29 Wednesday	
30 Thursday	Summer Essays in App. Sc.

OCTOBER, 1897.

1 Friday	Meeting of Fac. of App. Sc.
2 Saturday	Meeting of Medical Faculty.
3 SUNDAY	
4 Monday	
5 Tuesday	Founder's Birthday.
6 Wednesday	The Wm. Molson Hal opened, 1862. Meeting of Normal Sch. Com.
7 Thursday	
8 Friday	Meeting of Faculty of Arts.
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	College Grounds Committee.
13 Wednesday	
14 Thursday	Meeting of Finance Committee
15 Friday	University Athletic Sports.
16 Saturday	Register closes for Stud. in Medicine.
17 SUNDAY	
18 Monday	Engineering Build. Committee.
19 Tuesday	
20 Wednesday	
21 Thursday	Physics Building Committee.
22 Friday	Meeting of Faculty of Arts.
23 Saturday	Meeting of Governors.
24 SUNDAY	
25 Monday	Meeting of Museum and Library Committees.
26 Tuesday	Chem. and Min. Committee.
27 Wednesday	Regular Meeting of Corporation
28 Thursday	Reps. Schol. and Exhibitions
29 Friday	Accounts audited.
30 Saturday	New Library opened Oct. 31, 1893
31 SUNDAY	

NOVEMBER, 1897.

1 Monday	Meeting of Faculty of App. Sc
2 Tuesday	
3 Wednesday	Meeting of Normal School Com.
4 Thursday	
5 Friday	Meeting of Faculty of Arts.
6 Saturday	Meeting of Medical Faculty.
7 SUNDAY	
8 Monday	
9 Tuesday	College Grounds Committe.
10 Wednesday	
11 Thursday	Meeting of Finance Committee.
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	Engineering Build. Committee.
16 Tuesday	
17 Wednesday	
18 Thursday	
19 Friday	Meeting of Faculty of Arts.
20 Saturday	
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	
25 Thursday	
26 Friday	
27 Saturday	Meeting of Governors.
28 SUNDAY	
29 Monday	
30 Tuesday	Chem. and Min. Committee.

DECEMBER, 1897.

1 Wednesday	Meeting of Normal Sch. Com.
2 Thursday	
3 Friday	Meeting of Faculty of Arts.
4 Saturday	Meeting of Medical Faculty.
5 SUNDAY	
6 Monday	Meeting of Faculty of App. Sc.
7 Tuesday	
8 Wednesday	
9 Thursday	Meeting of Finance Committee.
10 Friday	
11 Saturday	Law Examinations begin.
12 SUNDAY	
13 Monday	
14 Tuesday	Lectures in Arts end. College Grounds Committee.
15 Wednesday	Christmas Ex. in Arts begin.
16 Thursday	
17 Friday	
18 Saturday	Meeting of Governors. Law Examinations end.
19 SUNDAY	
20 Monday	Engineering Build. Committee.
21 Tuesday	
22 Wednesday	Christmas Vacation begins. Autumn term Faculty of Medicine ends.
23 Thursday	
24 Friday	
25 Saturday	Christmas-Day.
26 SUNDAY	
27 Monday	
28 Tuesday	Chem. and Min. Committee
29 Wednesday	
30 Thursday	
31 Friday	

NOTE.—Meetings of the Faculty of Arts are held at 5 P.M. unless otherwise specified.

JANUARY, 1898.

1 Saturday	Meeting of Medical Faculty.
2 SUNDAY	
3 Monday	
4 Tuesday	Christmas Vacation ends.
5 Wednesday	Meeting of Normal Sch. Com. Lectures in Arts, Med. and App. Science resumed. Meetings of Facs. of Arts and App. Science.
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	Lectures in Law resumed.
11 Tuesday	College Grounds Committee.
12 Wednesday	
13 Thursday	Meeting of Finance Committee.
14 Friday	Meeting of Faculty of Arts.
15 Saturday	
16 SUNDAY	
17 Monday	Engineering Build. Committee.
18 Tuesday	
19 Wednesday	
20 Thursday	Physics Building Committee.
21 Friday	
22 Saturday	Meeting of Governors
23 SUNDAY	
24 Monday	Meeting of Museum and Library Committees.
25 Tuesday	Chem. and Min. Committee.
26 Wednesday	Regular Meet'g of Corporation. Examiners appointed. Annual Report to Visitor.
27 Thursday	
28 Friday	Meeting of Fac. of Arts.
29 Saturday	
30 SUNDAY	
31 Monday	Theses for M.A. and LL.D. to be sent in.

FEBRUARY, 1898.

1 Tuesday	Meeting of Fac. App. Science.
2 Wednesday	Meeting of Normal Sch. Com.
3 Thursday	
4 Friday	
5 Saturday	Meeting of Medical Faculty.
6 SUNDAY	
7 Monday	
8 Tuesday	College Grounds Committee.
9 Wednesday	
10 Thursday	Meeting of Finance Committee.
11 Friday	Meeting of Faculty of Arts.
12 Saturday	
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	
19 Saturday	
20 SUNDAY	
21 Monday	Engineering Build. Committee.
22 Tuesday	Chem. and Min. Committee.
23 Wednesday	No Lectures.
24 Thursday	
25 Friday	Physics & Engineering Building opened 1893. Meeting of Faculty of Arts.
26 Saturday	Meeting of Governors.
27 SUNDAY	
28 Monday	

MARCH, 1898.

1 Tuesday	Theses for B.C.L. Meeting of Fac. Ap. Science.
2 Wednesday	Meeting of Normal Sch. Com.
3 Thursday	
4 Friday	
5 Saturday	Meeting of Medical Faculty.
6 SUNDAY	
7 Monday	
8 Tuesday	College Grounds Committee.
9 Wednesday	
10 Thursday	Meeting of Finance Committee.
11 Friday	Meeting of Faculty. of Arts.
12 Saturday	
13 SUNDAY	
14 Monday	Meeting of Fac. of Ap. Science.
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	
19 Saturday	
20 SUNDAY	
21 Monday	Engineering Build. Committee
22 Tuesday	
23 Wednesday	
24 Thursday	
25 Friday	Meeting of Faculty of Arts. Reports of Attendance on Lects. Winter term ends Faculty of Medicine.
26 Saturday	Law Examinations begin.
27 SUNDAY	Meeting of Governors.
28 Monday	
29 Tuesday	Chem. and Min. Committee.
30 Wednesday	Lects. in Arts and Ap. Sc. end. Meeting of Fac. of App. Sc.
31 Thursday	Conv. for Degrees in Veterinary Science.

APRIL, 1898.

1 Friday	Examinations in Arts begin.
2 Saturday	Meeting of Medical Faculty.
3 SUNDAY	
4 Monday	Examinations in App. Sc. begin.
5 Tuesday	
6 Wednesday	Meeting of Normal Sc. Com.
7 Thursday	
8 Friday	Good Friday. Easter vacation begins.
9 Saturday	
10 SUNDAY	Easter.
11 Monday	
12 Tuesday	Easter vacation ends. Spring term begins Faculty of Medicine. College Grounds Committee.
13 Wednesday	
14 Thursday	Meeting of Finance Committee
15 Friday	
16 Saturday	
17 SUNDAY	
18 Monday	Engineering Build. Committee.
19 Tuesday	
20 Wednesday	
21 Thursday	Physics Building Committee.
22 Friday	
23 Saturday	Meeting of Governors.
24 SUNDAY	
25 Monday	Meeting of Museum and Library Committees.
26 Tuesday	Chem. and Min. Committee.
27 Wednesday	Regular meeting of Corporation.
28 Thursday	
29 Friday	Convocation for Degrees in Arts, Law and Applied Science.
30 Saturday	

MAY, 1898.

1 SUNDAY	
2 Monday	Meeting of Examiners for Sch. Examinations.
3 Tuesday	
4 Wednesday	Meeting of Normal Sch.Com.
5 Thursday	
6 Friday	
7 Saturday	Meeting of Medical Faculty.
8 SUNDAY	
9 Monday	Examinations in Normal School begin.
10 Tuesday	College Grounds Committee.
11 Wednesday	
12 Thursday	Meeting of Finance Committee.
13 Friday	
14 Saturday	
15 SUNDAY	
16 Monday	Engineering Build. Committee.
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	
21 Saturday	
22 SUNDAY	
23 Monday	
24 Tuesday	Queen's Birthday.
25 Wednesday	
26 Thursday	
27 Friday	Lectures end Fac. of Medicine.
28 Saturday	Meeting of Governors.
29 SUNDAY	Whit Sunday.
30 Monday	Examinations begin Faculty of Medicine, and for Matriculation and Associate in Arts.
31 Tuesday	Normal Sch. closes for Summer Vacation. Chem. and Min. Committee.

JUNE, 1898.

1 Wednesday	Meeting of Normal Sch. Com.
2 Thursday	
3 Friday	
4 Saturday	Meeting of Medical Faculty.
5 SUNDAY	Trinity Sunday.
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	Meeting of Finance Committee.
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	College Grounds Committee.
15 Wednesday	
16 Thursday	Physics Building Committee. Spring Term ends Faculty of Medicine. Convocation for degrees in Medicine.
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	Meeting of Museum and Library Committees. Engineering Build. Com'ttee.
21 Tuesday	
22 Wednesday	Regular Meeting of Corporat'n. Report of Normal School.
23 Thursday	
24 Friday	
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	
28 Tuesday	Chem. and Min. Committee.
29 Wednesday.	
30 Thursday	

JULY, 1898.

1 Friday	
2 Saturday	Meeting of Medical Faculty.
3 SUNDAY	
4 Monday	
5 Tuesday	
6 Wednesday	
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	
23 Saturday	
24 SUNDAY	
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	
30 Saturday	
31 SUNDAY	

AUGUST, 1898.

1 Monday	
2 Tuesday	
3 Wednesday	
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	
17 Wednesday	
18 Thursday	
19 Friday	
20 Saturday	
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	Peter Redpath Museum opened on the 24th August, 1882.
25 Thursday	
26 Friday	
27 Saturday	
28 SUNDAY	
29 Monday	
30 Tuesday	
31 Wednesday.	

FACULTY OF ARTS.

EXHIBITION, SCHOLARSHIP, &c., EXAMINATIONS, SEPTEMBER, 1897.

DAY.	DATE	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	HOUR.
Wednesday.	15	Greek.	Greek.	Greek.	9 to 12
"	15	Latin.	Latin.	Latin Prose Comp.	2 to 5
"	15			Mathematics.	9 to 12
Thursday.	16	Mathematics.	Mathematics.	Latin.	9 to 12
"	16			Mathematics.	9 to 12
"	16			Botany.	9 to 12
"	16	Mathematics.	Mathematics.	Ancient History.	2 to 5
"	16			Botany.	2 to 5
Friday.	17	English.	English.	English.	9 to 12
"	17			Logic.	9 to 12
"	17	English.		English.	2 to 5
"	17		Chemistry.	Chemistry.	2 to 5
Monday.	20			Mathematics.	9 to 12
"	20			Botany.	9 to 12
"	20		French.	French.	9 to 12
"	20	Grammar and Comp. (Classics.)	General Paper. (Classics.)	English Composition	2 to 5
Tuesday.	21	German. (Donalda Dt.)	Mathematics.	Mathematics.	9 to 12
			English.	German. (Donalda.)	2 to 5
			German.		

CHRISTMAS EXAMINATIONS DECEMBER, 1897.

DAY.	DATE	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
Wednesday.	15	Latin.	Latin.	Mechanics.	Astronomy.
"	15		M'matics, P.M.		
Thursday.	16	Greek.	Greek.	Greek.	Greek.
"	16			Zoology, P.M.	Latin, P.M.
Friday.	17	Mathematics.	Psychology.	Latin.	Moral Philosophy
"	17	French, P.M.	French, P.M.	Ment. Phil., P.M.	Geology, P.M.
Monday.	20	Chemistry.	Botany.		
"	20	German, P.M.	German, P.M.		
"	20	Hebrew, P.M.	Hebrew, P.M.		
Tuesday.	21	English.	History.		

FACULTY OF ARTS.

SESSIONAL AND HONOUR EXAMINATIONS, APRIL, 1898.

Date.	First Year.	Second Year.	Third Year.	Fourth Year.
April.	A.M. P.M.	A.M. P.M.	A.M. P.M.	A.M. P.M.
1 Fri.	Hebrew.....	Hebrew.....	Hebrew....	Hebrew and B.A. Honours.
4 Mon.	Greek.....Greek.	Greek..... ....Greek.	Mechanics.....	Ethics. Ethics.
5 Tues.	Latin.....Latin.	Latin.....Latin.	Latin.....Latin.	Latin. Latin.
6 Wed.	English.....English.	Mod. Hist.....	Ex. Phy- English. sics.....	Ex. Phy- English. sics.
7 Thurs.	....	.....	Botany...	Botany.
8 Fri.	Good Friday. Easter	vacation begins.....	.....	.....
13 Wed.	Geometry and Arithmetic....	Mathematics.....	Greek. .....Greek.	Mechanics and B.A. Honours.
14 Thurs.	Trigonometry and Algebra.....	Mathematics...	Astronomy and.... Optics.....	Astr'y. and Optics. B.A. Honours.
15 Fri.	French. German.	French. German.	Metaphysics.....	Geology. Geology
18 Mon.	Chemistry	Logic.....	Zoology..... ...	Greek. Greek.
19 Tues.	.....	Botany.....	French...German.	French. German B.A. Honours.
20 Wed.	Honour Examinations	Honour Examinations	Honour Exam'tions	B.A. Honours.
21 Thurs.	Meeting of Meeting of	Examiners and Facul Examiners and Facul	ty at 9.30 A. M. ty at 9.30 A. M.	
22 Fri.	Honour Examinations	Honour Examinations	Honour Exam'tions	B. A. Honours.
23 Sat.	Meeting of Examin	er and Faculty at	9.30 A.M.	
24 Sun.	.....	.....	.....	
25 Mon.	Meeting of Examiner	s and Faculty at 9.30	A.M. Declaration	of results.
26 Tues.	.....	.....	.....	.....
27 Wed.	Regular Meeting of C	orporation.....	.....	.....
28 Thurs.	.....	.....	.....	.....
29 Fri.	Convocation for Degr	ees in Arts.		

The Examinations begin at 9 A.M. and 2 P.M. when not specified otherwise.

FACULTY OF APPLIED SCIENCE.

SESSIONAL EXAMINATIONS, APRIL, 1898.

Days.	First Year.	Second Year.	Third Year.	Fourth Year.
4 Mon.	Desc. Geom. a.m.. Geom. Draw. p.m.	Desc. Geometry.	Theory of Structures	Chemistry. Theory of Struct.
5 Tues.	Mathematics.	Chemistry.	Chemistry. Machine Design.	Assaying. Dyn. of Machin'y.
6 Wed.	English.	Exp. Physics.	Exp. Physics.	Elect. Engin. Geodesy. Mechl. Eng.
7 Thurs.	Math. Lab.	Surveying.	Desc. Geom.	Geology (Adv.).
8 Fri.	Good Friday.	.....	.....	.....
9 Sat.	.....	Chemistry.	Theory of Structures	Chemistry. Elect. Engin. Geology. Theory of Struct.
10 Sun.	Easter Day.	.....	.....	.....
11 Mon.	Pract. Chem. (1)	Kinematics.	Surveying.	Mechl. Engin. Lab.
12 Tues.	Mathematics.	Mathematics.	Elect. Engin. Org. Chemistry.	Hydraulics. Org. Chemistry.
13 Wed.	.....	.....	Geology.	Hydraulics.
14 Thurs.	Pract. Chem. (2)	Arch tecture.	Dyn. of Mach.	Elect. Eng. Machine Design.
15 Fri.	Chemistry.	Mechl. Drawing.	Mechl. Drawing. Phys. Lab. Wk. p.m Municipal Eng a.m. and p.m.	Geology. Phys. Lab. Wk. p.m
16 Sat.	Pract. Chem. (3)	.....	Mining. Thermodynamics.	Thermodynamics.
17 Sun.	.....	.....	.....	.....
18 Mon.	Mathematics.	Zoology.	Railway Engin.	Desc. Elect. Eng. Geology. Railway Eng.
19 Tues.	.....	Botany. Mathematics.	Mathematics.	Municipal Engin. Mechl. Designing.
20 Wed.	.....	.....	Mineralogy (Adv.).	Geology.
21 Thurs.	.....	.....	.....	Metallurgy.
22 Fri.	.....	.....	Mineralogy (Adv.).	.....
23 Sat.	.....	.....	.....	.....
24 Sun.	.....	.....	.....	.....
25 Mon.	.....	.....	.....	.....
26 Tues.	.....	.....	.....	.....
27 Wed.	.....	.....	.....	.....
28 Thurs.	.....	.....	.....	.....
29 Fri.	Convocation.	.....	.....	.....

N.B.—The Examinations begin at 9.00 a.m. and 2.00 p.m. when not specified otherwise.

FACULTY OF ARTS.

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Faculty of Arts.

Part First.

SIR J. W. DAWSON, LL.D., Emeritus Principal, and Emeritus Professor in the Faculty of Arts.

I. OFFICERS OF INSTRUCTION.

PROFESSORS.

W. PETERSON, M.A., LL.D., Principal, and Professor of Classics.

ALEXANDER JOHNSON, M.A., LL.D., D.C.L., Vice-Principal, Dean of the Faculty of Arts, and Professor of Mathematics.

REV. J. CLARK MURRAY, LL.D., Professor of Mental and Moral Philosophy.

BERNARD J. HARRINGTON, M.A., Ph.D., Professor of Chemistry and Mineralogy.

CHARLES E. MOYSE, B.A., Professor of the English Language and Literature.

D. P. PENHALLOW, B.Sc., M.A.Sc., Professor of Botany.

REV. DANIEL COUSSIRAT, B.A., D.D., O.A., Professor of Hebrew and Oriental Literature.

JOHN COX, M.A., Professor of Physics.

A. JUDSON EATON, M.A., Ph.D., Associate Professor of Classics.

FRANK D. ADAMS, M.A.Sc., Ph.D., Professor of Geology and Palæontology.

HUGH L. CALLENDAR, M.A., Professor of Physics.

C. W. COLBY, M.A., Ph.D., Professor of History.

FRANK CARTER, M.A., Professor of Classics.

————————, Professor of Zoology.

LECTURERS.

PAUL T. LAFLEUR, M.A., Lecturer in Logic and English.

LEIGH R. GREGOR, B.A., Ph.D., Lecturer in the German Language and Literature.

MAXIME INGRES, Lecturer in French.

(*The above Professors and Lecturers constitute the Faculty.*)

OTHER OFFICERS OF INSTRUCTION.

C. H. MCLEOD, Ma.E., Superintendent of the Observatory.

NEVIL NORTON EVANS, M.A.Sc., Lecturer in Chemistry.

REV. H. M. TORY, M.A., Lecturer in Mathematics, and Demonstrator in Physics.

C. M. DERICK, M. A., Lecturer in Botany.

REV. J. L. MORIN, M.A., Sessional Lecturer in French.

S. B. SLACK, M.A., Lecturer in Classics.

F. H. PITCHER, B.A.Sc., Demonstrator in Physics.

ALEX. BRODIE, B.A.Sc., Demonstrator in Chemistry.

HOWARD T. BARNES, M.A.Sc., Demonstrator in Physics.

J. P. STEPHEN, Instructor in Elocution.

A. TAIT MCKENZIE, B.A., M.D., Instructor in Physical Culture.

II. COURSES OF LECTURES.

Classical Literature and History.

Professors :—W. Peterson, M.A., LL.D.
Frank Carter, M.A.

Associate Professor :— A. J. Eaton, M.A., Ph.D.

Lecturer :—S. B. Slack, M.A.

In this department, the work of the first two years is divided mainly between exercise in Grammar and Composition and the reading of selected authors. The attention of the student is at the same time directed to the collateral subjects of History, Literature, Antiquities, and Geography, in connection with which various text-books are recommended, as specified below.

In the Third and Fourth Years (as also in the Honour Courses) the instruction takes more of the lecture form, and an attempt is made to give a connected view of the leading branches of ancient literature and the most important phases of ancient life and thought.

Students may be examined on the whole of the work prescribed for each class, even though it may not have been overtaken in lecture.

Subjects are suggested for Summer Readings in the various branches of class work. Students are recommended to undertake these subjects during their long vacation, and credit will be given for them in the Annual Examinations.

Greek.

Ordinary

First Year.

1. In this class, besides a review of grammatical principles (Rutherford's Greek Grammar, Accidence), portions of some Greek authors—*e.g.*, XENOPHON, HOMER, HERODOTUS, LUCIAN and EURIPIDES—are read and explained.

For 1897-98 the work will be Phillpotts and Jerram's Easy Selections from Xenophon, Parts I-V (Clarendon Press); Homer, Iliad, XXII (Edwards, Pitt Press) ; Sidgwick's Scenes from the Medea of Euripides (Longmans). *History* from B.C. 560 to 479, Cox's Greeks and Persians (Longmans Epoch Series). For *Composition*, the manual used will be Abbott's Arnold's Greek Prose Composition (Longmans); for *Translation at Sight*, written and oral, Turner's Latin and Greek Passages (Longmans).

Second Year.

2. The work of the Second Year will be selected mainly from the Greek Dramatists, and from THUCYDIDES, PLATO or DEMOSTHENES.

Subjects for 1897-98 :—

SUMMER READINGS.—Plato, Crito (Adam, Pitt Press), and Cebetis Tabula (Jerram, Clarendon Press). *History.*—The Athenian Supremacy, Cox's Athenian Empire (Longmans' Epoch Series) with Jebb's Primer of Greek Literature, pp. 1-100. Students are also re- Abbott's Pericles (Putnam). *Literature.*—Outlines as contained in commended to work through some portion of Burnet's Greek Rudiments (Longmans).

SESSIONAL LECTURES.—THUCYDIDES (Moore's Easy Selections, pp. 47-111, Longmans), and Sophocles, Electra (Campbell & Abbott, Clarendon Press ; or Jebb, (Rivingtons). The practice of *Composition* and *Translation at Sight* will be continued as before : Sidgwick's First Greek Writer and Jerram's Anglice Reddenda.

The following books are recommended for general use during the first two years of the course :—Jebb's Introduction to Homer (Macmillan), supplemented by readings in Murray, Jevons or Mahaffy ; Oman's History of Greece (Percival) ; Mahaffy's Primer of Greek Antiquities ; and Tozer's Primer of Classical Geography (Macmillan). Rutherford's Greek Grammar (Accidence and Syntax) ; or Sonnenschein's (Parallel Grammar Series, or Burnet's Greek Rudiments).

Students should provide themselves also with Kiepert's Atlas Antiquus.

Subjects for 1897-98.

Third Year.

3. SUMMER READINGS.—Luciani Vera Historia (Jerram : Clarendon Press.) *History.*—The Peloponnesian War and Outlines to the Battle of Chaeronea (Oman's History with Sankey's Spartan and Theban Supremacies, Longmans). *Literature.*—The origin and growth of the Drama. The Historians and Orators (Murray's Ancient Greek Literature (Heinemann)

SESSIONAL LECTURES.—Demosthenes, Leptines (King, Macmillan) ; Aristophanes, Equites (Merry, Clarendon Press). For practice in *Composition*, Sidgwick's Introduction to Greek Prose Composition will be used ; for *Translation at Sight* Fowler's Sportella (Rivingtons).

Fourth Year.

4. Subjects for 1897-98.

SUMMER READINGS. – Pratt & Leaf's Homer, the Story of Achilles (Macmillan's Classical Series). The Constitutional History of Athens, with a general study of Greek Antiquities and Literature.

SESSIONAL LECTURES.—Plato, Protagoras (Adam, Pitt Press) : Euripides, Orestes (Wedd, Pitt Press). *Composition* and *Translation at Sight* as in the Third Year.

The following books are recommended for general use: Gow's Companion to School Classics (Macmillan); Jebb's Growth and Influence of Classical Greek Poetry (Macmillan); Campbell's Guide to Greek Tragedy (Percival); Butcher's Demosthenes (Classical Writers Series); Abbott's Pericles (Putnam); Jevons's or Mahaffy's or Murray's History of Greek Literature; Kiepert's Manual of Ancient Geography (Macmillan); Greenidge's Constitutional History.

Honours.

Third Year.

5. The books selected for class reading during session 1896-97 are the following:— HOMER, Odyssey IX, X, XII (Merry, Clarendon Press); THUCYDIDES, Book IV (Graves, Macmillan; or Barton & Chavasse, Longmans); ÆSCHYLUS, Prometheus (Prickard, Clarendon Press); EURIPIDES, Electra, (Lodge, Ginn); PLATO, Gorgias (Thompson, Bell).

For practice in *Composition*, written and oral, the manual used will be Sidgwick's Introduction to Greek Prose Composition: for *Translation at Sight*, Fox & Bromley's Models and Exercises (Clarendon Press). In *History* the examination will be directed to testing a general knowledge of the course of Greek History to the death of Alexander, and a more minute knowledge of the development of the Athenian Constitution and the period of Athenian Supremacy. In *Literature*, a general knowledge will be expected of the course of Greek literature, and a more minute knowledge of the lives and writings of the authors prescribed.

Fourth Year.

6. In this class students will be expected to overtake a comprehensive programme of reading, such as the following, in whole or in part:—HOMER, Iliad, Selections from Books I-VI* (Leaf and Bayfield, Macmillan); Lyric Poets (Tyler's Selections, Ginn & Co., or Hiller's Anthologia Lyrica, Teubner); PINDAR (Seymour's Selected Odes, Ginn & Co.); Herodotus VII (Butler, Macmillan); THUCYDIDES Book I (Forbes, Clarendon Press); ÆSCHYLUS, Agamemnon (Sidgwick, Clarendon Press): SOPHOCLES, Antigone and Philoctetes* (Jebb, Cambridge Press); ARISTOPHANES, Frogs (Merry, Clarendon Press); PLATO, Republic, I-IV, (Clarendon Press); Attic Orators, (Jebb's Selections, Macmillan); ARISTOTLE, Poetics*, omitting XX and XXV (Butcher, Macmillan); Ethics I, II and X (Bywater, Oxford); DEMOSTHENES, De Corona* (Drake, Macmillan).

Translation at Sight.—Fox & Bromley's Models and Exercises (Clarendon Press).

Prose Composition.—Sidgwick, and from Dictation.

** An asterisk is affixed to the books which will be left to the student's private reading with help and direction from the Professor.*

History, Literature and Antiquities.—Readings from Grote, Curtius, Mahaffy, Symonds, Murray ; Jebb's Growth and Influence of Classical Greek Poetry ; Leaf's Companion to the Iliad : Butcher's Aspects of the Greek Genius : Mahaffy's Social Life in Greece : Jebb's Attic Orators.

Grammar and Philology.—Goodwin's Greek Moods and Tenses, and Giles's Short Manual of Philology, (Macmillan) ; Monro's Homeric Grammar (Clarendon Press.)

Latin.

Ordinary First Year.

1. In this class, besides a general review of grammatical principles (Sonnenschein's Latin Grammar ; Parallel Grammar Series)—portions of some Latin author such as OVID, TIBULLUS, LIVY, SALLUST, VIRGIL, HORACE or CICERO—are read and explained.

For 1897-98, the subjects will be OVID, Metamorphoses VIII (Keene) : CICERO, Pro Lege Manilia (Wilkins, Macmillan) ; VIRGIL Georgics I (Sidgwick, Pitt Press.) For practice in *Composition*, both written and oral, the text-book in use during the first two years will be Heatley's Latin Exercises (Longmans), with selected Passages for continuous Prose ; and for *Translation at Sight*, Turner's Latin and Greek Passages (Longmans). *History.*—Carthaginian Wars, B. C., 263-146 (Shuckburgh's History of Rome).

Second Year.

2. For 1897-98, the subjects will be :—

SUMMER READINGS.—CÆSAR B. G. III (Peskett, Pitt Press). *History.*—The last Century of the Republic, B. C., 133-31 ; Strachan Davidson's CICERO and Warde-Fowler's CÆSAR (Putnam) ; Beesly's, The Gracchi, Marius and Sulla (Longmans' Epoch Series). Students are also recommended to work through some portion of Ramsay's Manual of Latin Prose Composition (Vol. I.).

SESSIONAL LECTURES.—LIVY, I (Allen & Greenough, Ginn) ; VIRGIL, Aeneid VII (Sidgwick, Pitt Press) ; HORACE, (Wickham's Selected Odes, Clarendon Press) ; *Composition* and *Translation at Sight*, Ramsay's Manual of Latin Prose Composition, Vol. I. (Clarendon Press) ; and Jerram's Anglice Reddenda (First Series).

The following books are recommended for general use during the first two years of the course : Shuckburgh's History of Rome (Macmillan) ; Wilkins's Primer of Roman Literature, Wilkins's Primer of Roman Antiquities : Gildersleeve's Latin Grammar, Allen & Greenough's, or Roby's.

Students should provide themselves also with Kiepert's Atlas Antiquus.

Third Year.

3. Subjects for 1897-98.

SUMMER READINGS.—CICERO, Pro Roscio Amerino (Donkin, Macmillan). *History.*—The Making of Rome (to 390 B. C.), Ihne's Early Rome (Epoch Series), and Shuckburgh's History. *Literature.*—Mackail's Primer of Roman Literature.

SESSIONAL LECTURES.—TACITUS, Histories I (Davies, Pitt Press); LUCAN, VII (Postgate, Pitt Press); HORACE, Epistles II, Wilkins (Macmillan). The text-book for *Composition* will be Sargent's Easy Latin Prose Exercises (Clarendon Press); and for *Translation at Sight*, Fowler's Sportella (Rivingtons).

Fourth Year.

4. Subjects for 1897-98.

SUMMER READINGS.—VIRGIL, Aeneid, I-III (Page, Macmillan, or Sidgwick, Pitt Press). *History.*—Capes's Early Roman Empire (Longmans' Epoch Series); or Bury's History (John Murray), down to Domitian.

SESSIONAL LECTURES.—CICERO, Tusculan Disputations, Book I; JUVENAL Selected Satires (Hardy, Macmillan). *Composition* and *Translation at Sight*, as in the Third Year.

NOTE.—The following books are recommended for general use: Gow's Companion to School Classics (Macmillan); Mackail's Latin Literature (Murray); Pelham's Outlines of Roman History (Percival); Capes's Early Roman Empire (Longmans' Epoch Series); Inge's Roman Society in the First Century, A.D.; Kiepert's Manual of Ancient Geography (Macmillan).

Honours.

Third Year.

5. The books selected for class reading during session 1897-98 are the following: CICERO, Pro Milone (Reid, Cambridge Press); LUCRETIUS; I-III (Lee, Macmillan) TACITUS, Annals, Book I (Furneaux, Clarendon Press); VIRGIL, Aeneid, Book XII (Sidgwick, Cambridge Press); HORACE, Epistles, Book I (Wilkins, Macmillan); MARTIAL (Selections: Stephenson, Macmillan).

For practice in *Composition*, written and oral, the manual used will be Nixon's Selections from Prose Extracts (Macmillan); for *Translation at Sight*, Fox & Bromley's Models and Exercises. Students are recommended also to provide themselves with Meissner's Latin Phrase-Book (tr. by Auden, Macmillan.) In *History* the examination will be directed to testing a general knowledge of the course of Roman History to the end of the First Century A.D., and a more minute knowledge of the period from B.C. 146 to the Death of Augustus. In *Literature*, a general knowledge will be expected of the course of Roman Literature, and a more minute knowledge of the lives and writings of the authors prescribed.

Fourth Year.

6. In this class, students will be expected to overtake a comprehensive programme of reading, such as the following, in whole or in part :—TERENCE, Phormio (Sloman, Clarendon Press, Macmillan) ; PLAUTUS, Rudens (Sonnenschein, Macmillan) ; CATULLUS (Simpson, Macmillan) ; CICERO, de Oratore, Book I *(Wilkins, Macmillan) ; In Verrem II (Teubner text) ;Letters (Tyrrell, Macmillan) ; HORACE Odes III and IV* (Page, Macmillan); VIRGIL, Aeneid IV—VI Sidgwick, Clarendon Press) ; TACITUS, Annals XIV-XVI (Furneaux, Clarendon Press) ; Dialogus de Oratoribus (Peterson, Clarendon Press) ; PROPERTIUS IV (Postgate, Macmillan) ; QUINTILIAN, X* (Peterson, Clarendon Press—smaller edition).

Translation at Sight—Fox & Bromley's Models and Exercises (Clarendon Press). *Prose Composition.*—Nixon's Prose Extracts ; and Selected Passages.

History, Literature, and Antiquities—Readings from Mommsen, Merivale, Sellar, Teuffel-Schwabe (translated by Warr) : Tyrrell's Latin Poetry ; Students Companion to Latin Authors (Middleton & Mills, Macmillan).

Grammar and Philology.—Lindsay's Short Historical Latin Grammar, (Clarendon Press) and Giles's Short Manual of Philology (Macmillan) ; Lindsay's Textual Emendation (Macmillan).

English Language and Literature.

Professor :—Chas. E. Moyse, B.A.
Lecturer in Rhetoric and English :—P. T. Lafleur, M.A.

Ordinary First Year.

English Literature and Composition.—One lecture a week will be given to instruction in the principles of English Composition. Regular exercises and themes will be required from all students. The remainder of the course will be occupied in the systematic study of masterpieces of English Literature. The course for 1897-98, will discuss the work of leading British Essayists from Bacon to Goldsmith. Two hours a week.

Third Year.

2. A course on MIDDLE ENGLISH. CHAUCER, Prologue to the Canterbury Tales (Morris and Skeat, Clarendon Press) will be read in class, and used to illustrate the leading features of the development of the English Language. The life and thought of Chaucer's day will be touched on, and the social aspects of England illustrated by lantern slides. (To be taken with 3.) One hour a week.

* *An asterisk is affixed to the books which will be left to the student's private reading, with help and direction from the Professor.*

Third Year. 3. A course on RHETORIC. Text-Book : GENUNG, Rhetoric. (To be taken with 2.) One hour a week.

Fourth Year. 4. A course on the LEADING POETS OF THE NINETEENTH CENTURY. The chief aspects of the French Revolution will be considered, and Republican feeling in England illustrated, chiefly from the works of WORDSWORTH, COLERIDGE and SOUTHEY. The indirect revolutionary poets BYRON and SHELLEY will then be considered, and their typical poems, together with those of the poets already mentioned, critically examined. The remainder of the course will be given to SCOTT, KEATS, TENNYSON, BROWNING AND SWINBURNE.—*In the course for 1897-98, special attention will be given to Tennyson and Browning.* One hour a week.

Private reading will also be required of the student, and the time to be given to this part of the subject may be regarded as equivalent to that required to obtain a good knowledge of the matter of the lectures.

Honours.

Fourth Year. 5. MŒSO-GOTHIC. The course on Mœso-Gothic is intended to open the way to the comparative study of allied Teutonic languages. Particular attention will be given to the phonological relations of Mœso-Gothic and Anglo-Saxon. *Text book :* The Gospel of St. Mark (Skeat, Clarendon Press). One hour a week.

Third Year. 6. ANGLO-SAXON. An elementary course on Anglo-Saxon. The object of the course is to make the student familiar with the grammar of the language and to enable him to read easy passages at sight. Leading features of Teutonic philology will be noticed when the text calls for them. Exercises in Anglo-Saxon scansion will form a part of the regular work of the class. *Text-books :* SWEET, Anglo-Saxon Primer and Anglo-Saxon Reader, Extt. IV-VIII, and the pieces in verse. Two hours a week.

Fourth Year. 7. ANGLO-SAXON. BEOWULF. The text will be read in class and illustrated by notes on origins, philology, and verbal emendations. *Text-book :* Harrison and Sharp (Ginn.) One hour a week.

Third Year. 8. EARLY AND MIDDLE ENGLISH. The course is intended to give a knowledge of dialectal English, and to illustrate the changes which the language has undergone. *Text-books :* MORRIS and SKEAT's Specimens, Part II, Extt. I-IX. CHAUCER, Parlement of Foules. (Skeat, Minor poems of Chaucer, Clarendon Press.) One hour a week.

Fourth Year. 9. EARLY ENGLISH. The course is a continuation of 8. *Text-book :* MORRIS and SKEAT's Specimens, Part II, Extt. X-XX. One hour a week.

10. Elizabethan and Early Stuart Periods. The general influences visible in the literature of the periods will be noticed by way of introduction to a critical examination of the following works which have been selected for private study: Spenser, Shepheards Calender (Herford, Macmillan); Faerie Queene, Bk. I. (Percival, Macmillan); Sidney, An Apology for Poetry (Cook); Milton, Shorter English Poems (Browne, Clarendon Press); and Areopagitica (Hales). One hour a week. **Third Year.**

11. Shakspere. The social and literary conditions of Elizabethan England will be noticed, and the characteristics of the pre-Shaksperian drama specially illustrated. The following plays have been selected for special criticism and private study: Love's Labour Lost (Rolfe); A Midsummer Night's Dream (Deighton, Macmillan); Hamlet (Deighton, Macmillan); and the Tempest (Deighton, Macmillan). One hour a week. **Fourth Year.**

12. Later Stuart Period. The method of 10 will be followed. The works selected for private study are: Dryden, Annus Mirabilis, Absolom and Achitophel, Part I, the Preface to the "Fables" (Globe Edition, or for Absalom and Achitophel. Dryden's Satires, ed. Collins, Macmillan). Addison, Essays on Paradise Lost and on the Imagination (Spectator, ed. Henry Morley, Routledge). One hour a week. **Third Year.**

13. Later Stuart Period. An introductory sketch of the critical and philosophical essayists in verse, leading up to a more minute examination of the following works of Pope, which have been selected for private study: Essay on Criticism, (Churton Collins, Macmillan); Essay on Man (Morris, Macmillan). One hour a week. **Fourth Year.**

14. Period of Popular Influence. Influence of the French Revolution. The influence of the French Revolution on contemporary English Literature will be discussed. The following poems have been selected for special criticism and private study: Wordsworth, Prelude (Moxon's edition), and Campbell, Pleasures of Hope. One hour a week. **Third Year.**

15. Modern Poets. An interpretation in detail of Tennyson's In Memoriam and a comparative criticism of other famous English poems of the same class. An outline of the growth of the Arthur Saga and a special examination of Tennyson's Idylls of the King. Browning, Christmas Eve and Easter Day. **Fourth Year.**

In addition to the poems just mentioned, Milton's Lycidas, Shelley's Adonais, and Matthew Arnold's Thyrsis have been selected for private study. One hour a week.

Note.—**Honour** students of the Third Year will privately study the following works, and write an essay on some topic arising from them : BURKE, Reflections on the French Revolution ; LESLIE STEPHEN, English Thought in the Eighteenth Century, Vol. II, chap. X, secs. V to X inclusive. The Essay will count in the awarding of honours.

Honour students of the Fourth Year will, in like manner, take the following : MORE, Utopia ; MATTHEW ARNOLD, Essays in Criticism (the Second Series).

Readings from authors who do not find a place in the above courses will be given by Prof. Moyse on Saturdays, at noon. The selections will be taken for the most part from writers of the present century. Attendance is voluntary.

French.

Lecturer in French :—M. Ingres, B-ès-Lettres.
Sessional Lecturer :—J. L. Morin, M.A.

The earlier courses of instruction in French have been framed with the view of enabling the student to speak the language with facility and correctness. In the later courses, particular attention will be given to the style and substance of leading French writers, both in prose and verse, and also to the historical development of the French language and literature. Instruction will be given according to the natural method, the French language being exclusively used.

Ordinary First Year.

1. The following outline will indicate the character of the course. (*a*) The oral reproduction of stories by French writers of the present century, so selected as to bring out the national aspects of French life. In connection with this part of the work, words will be referred to groups and their formation noticed. (*b*) Biographical sketches of the leading writers of the present century, illustrated by typical selections from their works, which will be read by the class, and committed to memory. Points of grammar will be treated incidentally, and the elements of French prosody taught. (*c*) Private Reading, the amount and character of which will be determined by the requirements of the individual student. The following works may be taken as specimens of the literature chosen for the class : E. AUGIER, Le Gendre de M. Poirier ; BALZAC, Le Curé de Tours ; DE VIGNY, Cinq-Mars. In the examisation of the students of affiliated colleges the extracts given for translation from French into English will be taken, in part, from the three works mentioned above.

There will be regular exercises in dictation and composition. Students are recommended to use Le Dictionnaire Larousse, (Paris edition.) Three hours a week.

Second Year.

2. The method of the course is the same as that of 1, but the more advanced points of grammar will be treated, and in literature particular attention will be directed to characteristics of style.

The following works may be taken as specimens of the literature chosen for the class: V. Hugo, Notre Dame de Paris; Th. Gautier, Le Roman de la Momie; Mme. de Stael, Corinne.

In the examination of the students of affiliated colleges the extracts given for translation from French into English will be taken, in part, from the three works mentioned above.

There will be regular exercises in dictation and composition. Students are recommended to use Le Dictionnaire Larousse.

Three hours a week.

Third Year.

3. A continuation of 2. The form and origin of words will be treated more fully than in previous courses, and an outline of philology given. In the literary portion of the course the leading characteristics of the Classic, Romantic, Realistic, Impressionist and other schools will be described. Biographical sketches of writers who belong to the XVII and XVIII centuries will be given, and illustrated by typical selections from their works, which will be read in class and committed to memory. The following works of the same period have been chosen for private reading previous to their consideration by the class: B. de St. Pierre, Paul et Virginie; Voltaire, Siècle de Louis XIV; Rousseau, Emile, Le Contrat Social; Corneille, Le Cid, Horace, Cinna; Racine, Athalie, Phèdre, Andomaque; Molière, Tartuffe, Le Misanthrope, Le Bourgeois Gentilhomme; Mme. de Sévigné, Lettres; Bossuet, Discours sur l'Histoire Universelle; Oraisons funèbres; Pascal, Lettres provinciales.

There will be regular exercises in composition.

Two hours a week.

Fourth Year.

4. Important historical changes of various kinds in the vocabulary of French will be noticed, and sentences presenting peculiar difficulties explained. The origin on the French language will be more fully treated, and French literature previous to Corneille read. Biographical sketches of leading writers of that period will be given, and typical selections from their works committed to memory. The following works have been chosen for private reading previous to their consideration by the class: Montaigne, Essais, La Satire Ménippée; Descartes, Discours de la méthode; Amyot, Traduction de Plutarque; Calvin, L'Institution Chrétienne; Rabelais, Gargantua, Pantagruel; Commines, Louis XI; Joinville, Vie de Saint Louis; Froissart, Chroniques; Villehardouin, Chroniques.

There will be regular exercises in composition.

Two hours a week.

Honours.

Third Year.

5. *Grammar.*—A course on French grammar treated historically. Students are recommended to consult the following works : BRACHET, Grammaire Historique de la Langue Française, Dictionnaire Etymologique ; BRUNOT, Grammaire Historique de la Langue Française ; CLÉDAT, Grammaire de la Vieille Langue Française ; LITTRÉ, Histoire de la Langue Française. F. BRUNETIÈRE, Etudes Critiques; G. PARIS, La Littérature Française au Moyen Age.

Literature.—The student is expected to undertake a thorough study of the following works, portions of which will be read in class : LE ROMAN DE LA ROSE ; LE ROMAN DE RENART ; J. BÉDIER, Les Fabliaux ; PETIT DE JULLEVILLE, Les Mystères.

Two hours a week.

Fourth Year.

6. A course in Old French. The student will be guided in a comparative study of the Romance languages, and will use the following works of reference : E. RENAN, Essai sur la Poésie des Races Celtiques. EGGER, l'Hellénisme en France ; ROQUEFORT. Glossaire de la Langue Romane ; BUSGNY, Grammaire de la Langue d'Oil ; BRÉAL, Grammaire comparée ; F. DIEZ, Grammaire des Langues Romanes ; MEYER-LUBKE, Grammaire des Langues Romanes.

The literary biography and history of the period will be treated, and in connection therewith the following works will be read :

JEAN BODEL, Le Jeu de saint Nicolas ; WACE, Le Roman de Rou, Le Roman de Brut ; LA CHANSON DE ROLAND ; LA VIE DE SAINT ALEXIS, LA VIE DE SAINT LEGER.

Two hours a week.

German Language and Literature.

Lecturer :—L. R. Gregor, B.A., Ph.D.

The ordinary Courses mainly keep practical ends in view. As far as possible they place the student at the German standpoint, so that he may study the language from within. Special attention is given to colloquial exercises in the First and Second Courses, to Literature in the Third and Fourth. The German Language is employed to a considerable extent in the First and Second Courses, and almost to the exclusion of English in the Third and Fourth. Importance is attached to correct and expressive reading. Classic texts are carefully studied, from the aesthetic and critical, as well as from the historical and linguistic points of view.

First Year.

1. The Joynes-Meissner German Grammar (Heath & Co.); Freytag, Die Journalisten; Uhland, Ballads and Romances (Macmillan); Baumbach, Der Schwiegersohn (Heath & Co.); Colloquial exercises.

Three hours a week.

Second Year.

2. Vandersmissen and Fraser's German Grammar: Schiller, Die Jungirau von Orleans; Storm, Immensee (Heath & Co.); Heine, Prose (Selections.)

Two hours a week.

Third Year.

3. Schiller, Die Jungirau von Orleans; Goethe, Iphigenie: Heine, Die Harzreise; German Grammar; History of German Literature.

Two hours a week.

Fourth Year.

4. Benedix, Die Hochzeitsreise; Goethe, Egmont; Lessing, Nathan der Weise; German Grammar; German Compositions, with translation from English into German (Horning).

Two hours a week.

Honours

Lectures in this Course are given entirely in the German Language. They reproduce the main features of the Ordinary Courses. In addition to this class of studies an account is given of the development of the German Language. Students are encouraged to undertake independent work, to write German compositions on literary subjects of especial interest to themselves. In order to obtain First or Second Rank Honours, candidates must also be capable of speaking German.

Honour Students of the Third and Fourth Years take lectures together. The order in which the following text-books are taken up is subject to re-arrangement :—

Third Year.

5*a*. A special study of Goethe's Faust (Part I): Goethe, Leiden des jungen Werther; Selections from Herder's Volkslieder; Macmillan's German Composition.

N.B.—The above constitutes the Additional course. See p. 41.

5*b*. Goethe, Egmont; Lessing, Emilia Galotti; Extracts from Freytag's Bilder aus der deutschen Vergangenheit; Schiller, Don Carlos; History of German Literature (Kluge); Historical Grammar.

Fourth Year.

6*a*. Lessing, Laokoon; Behaghel, Deutsche Sprache; Grillparzer Sappho; Schiller, Die Braut von Messina; Macmillan's German Prose Composition.

N.B.—The above constitutes the Additional Course. See p. 50.

6*b*. GOETHE, Sessenheim, (Heath & Co.) ; KLOPSTOCK, Messias, (one canto) ; WIELAND, Oberon (Selections) ; SUDERMANN, Die Ehre ; SCHEFFEL, Trompeter von Säkkingen, Selections from HEINE'S Lyrical Poems ; HARTMANN VON AUE, Gregorius auf dem Steine ; ZARNCKE, Das Nibelungenlied. History of German Literature (KLUGE) ; Original Compositions in German.

In order to obtain First or Second Rank Honours, a Candidate must be capable of speaking and writing German.

Semitic Languages.

Professor:—D. Coussirat, B.A., B.D., D.D., Officier d'Academie.

The course comprises lectures on the above languages and their literature, their genius and peculiarities. Comparative philology, affinity of roots, etc., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, etc.

Ordinary

First Year. 1. Hebrew Grammar (Inductive Method). Oral and written exercises in Orthography and Etymology. Translation and grammatical Analysis of the Old Testament. *Text-books :* HEBREW BIBLE, HARPER'S Elements of Hebrew, Introductory Hebrew Method and Manual.
Two hours a week.

Second Year. 2. Hebrew grammar and translation continued. English rendered into Hebrew. Masoretic notes explained. The Hebrew text compared with the Septuagint and Vulgate Versions.
Two hours a week.

Third Year. 3. Hebrew Syntax. Translation of difficult passages of the Old Testament. Notes on the MASORA and the TALMUD (Mishna and Gemara).
Two hours a week.

Fourth Year. 4. Translation continued. Characteristics of the Semitic Languages, particularly of ARAMAIC, SYRIAC, SAMARITAN, RABBINIC, ARABIC, ASSYRIAN, SEMITIC INSCRIPTIONS.
Two hours a week.

Honours.

Third Year. 5*a*. HEBREW. Genesis. Isaiah, 40-66. Ecclesiastes. *Literature.*—F. LENORMANT, The beginnings of History.

5*b*: ARAMAIC.— Daniel. Ezra. Selections from the Targums.
Literature.—SAYCE, Lectures on the Origin and Growth of Religion.
Two hours a week.

6*a*. HEBREW.—Malachi, Psalms, 1-72; Job, 26-42. *Literature.*— RENAN, A General History of the Semitic Languages. **Fourth Year.**

6*b*. SYRIAC.—Selections from the Peshito, and from the CHRONICLES OF BAR HEBRÆUS. *Literature.*—W. WRIGHT, Comparative Grammar of the Semitic Languages.
Two hours a week.

5*b*. and 6*b*. (*Literature excepted*) are the Additional Courses.

History.

Professor :—Charles W. Colby, M.A., Ph.D.

Ordinary

1. THE POLITICAL HISTORY OF EUROPE FROM 1789 TO 1878. **Second Year.**
Two hours a week.

The method of instruction followed in this course is topical rather than chronological. The lectures seek to present certain leading movements and tendencies in relief with a view to explaining the course of modern international relations. The most important subjects to be examined are the French Revolution, the growth of Democracy and Nationality, the Eastern Question, and the actual political state of the British Empire.

Honours

2. THE GERMAN INROADS AND THE MIDDLE AGES. **Third and Fourth Years.**
Three hours a week.
(Omitted in 1897-98.)

3. THE RENASCENCE AND THE REFORMATION.
Five hours a week during the last sixteen weeks of the session.

Beginning with Petrarch, the progress of Italian Humanism will be traced with some detail. Throughout the second term attention will be chiefly fixed upon the countries of northern Europe, although the part of Spain and Italy in the Counter Reformation will be discussed. The Lutheran schism will not be regarded in isolation, but in the light of the New Learning and 16th century politics. The spread of reformed doctrines will be followed out, and if time permits,

the culture of northern Europe during the 16th century will receive separate notice. The rapid growth of diplomatic intercourse during the Thirty Years War, and French advance towards the Rhine, will be the concluding subjects. It is hoped that the course may extend to the Peace of Westphalia.

4 STUDIES IN THE HISTORY OF DEMOCRATIC INSTITUTIONS DURING THE MIDDLE AGES.

Five hours a week during the first eight weeks of the session.

Putting England aside, phases of popular government on the Continent will be studied. The treatment of these in class will not necessarily be consecutive, but attention will be confined to such topics as the Tribal Organization of the Germans ; the Communal Movement in (*a*), Northern France, (*b*) Lombardy, (*c*) Tuscany ; the States-General ; the Cortes of Aragon ; and the League of the Forest Cantons. Readings will be given from the text of the chief constitutional documents, and the bearings of mediaeval democracy upon feudalism will be particularly considered.

5. THE FRENCH REVOLUTION, 1789-95.

Three hours a week.

(Omitted in 1897-98.)

Note.—Courses 2 and 3 are given in alternate years. Courses 4 and 5 are given in alternate years.

Bibliographical lists relating to the historical courses given in 1897-98 may be had on application to the Secretary.

SUMMER READINGS.

Students who are devoting special attention to the literary branches of the University course are advised to read, during the long vacation, either the first or the second set of the subjoined selections.

I. HERODOTUS, VI-VIII, Macaulay's trans : THUCYDIDES, I, II, 1-65, VI, VII, Jowett's trans : PLATO, the Republic, Jowett's trans : PLUTARCH, the Lives of Aristides, Themistocles, Pericles, and Timoleon, Clough's trans : POLYBIUS, I, II, V, Shuckburgh's trans : LIVY, XXI-XXII, Church and Brodribb's trans : TACITUS, Annals II, Germania, Vita Agricolae, Church and Brodribb's trans.

II. CLARENDON, History of the Rebellion, Book XI : GIBBON Decline and Fall, Chaps. XLIV, L, LI, LXVI ; BURKE, Reflections on the French Revolution ; HALLAM, Middle Ages, Chap. III ; MACAULAY, History of England, Chap.

III ; Bagehot, The English Constitution ; Stubbs, Select Charters Introduction ; Bryce, The Holy Roman Empire Chaps. I-XV ; Lord Acton, German Schools of History, English Historical Review, Vol. I. ; Matthew Arnold, Pagan and Mediaeval Religious Sentiment, in Essays in Criticism (First Series).

Mental and Moral Philosophy.

Professor :—J. Clark Murray, LL.D.
Lecturer :—P. T. Lafleur, M.A.

Ordinary

Second Year.

1. This course takes up in the first term the elements of **Psychology**, in the second the elements of **Logic**. Students are referred, among other works, to Murray, Handbook of Psychology, Book I., and to Jevons, Elementary Lessons on Logic.
Three hours a week.

Third Year.

2. In the first term the course takes up the Logic of Induction. Students are referred specially to Mill, System of Logic, Book III.
Two hours a week.

In the second term the course takes up the most interesting problems in the Psychology of Cognition, tracing, as far as possible, the principal stages in the evolution of intelligence. The general problem, also, of the nature of knowledge is discussed, in view of the light which it throws on the ultimate nature of reality. Students are referred, among other works, to Murray, Handbook of Psychology, Book II., Part 2. Students are also required to write an essay on some philosophical subject.
Two hours a week.

Fourth Year.

This course is devoted entirely to Moral Philosophy, and follows, in its general outline, the subjects discussed in Murray's Introduction to Ethics. Students are also required to write essays on ethical questions.
Three hours a week.

Honours.

Third Year.

4. This course is devoted mainly to the history of Greek Philosophy. It begins with the colonial period, during which philosophical activity was most energetic among the colonies of the Greeks in Asia Minor and Italy. It then passes on to the Athenian period, beginning about the middle of the fifth century, B.C., when Philo-

sophy found a home in the greatest centre of intellectual life in the ancient world. A third period is then described, during which Philosophy extends its culture over ancient life by the spread of the great schools, especially the Stoical and the Epicurean, which arose towards the end of the fourth century, B. C. Finally, some account is given of the movement, of which Alexandria was the centre, and by which Greek Philosophy was brought into contact with Oriental thought. The history is carried down to the closing of the Pagan Schools in Athens by the Emperor Justinian. Occasional lectures are also given on the other special studies of the Third Year Honour Course. Students are expected to make an independent study of the fragments of one of the early philosophers, and to write an essay embodying the results of their study.

Two hours a week.

The subjects of examination will be, in addition to the lectures, the following :—

Part I.—Schwegler's History of Philosophy, Chapters 1-21 inclusive ; Mill's System of Logic, Books IV. and V. ; James' Principles of Psychology, Chapters 10-16 inclusive ; selected portions from Thomson's Outline of the Laws of Thought, from Jevons' Principles of Science, and from Venn's Empirical Logic. Any two of these subjects, along with the Honour Lectures, may be taken as the Additional Course.

Part II.—Plato's Theaetetus (by S. W. Dyde) ; Fraser's Selections from Berkeley.

Fourth Year.

5. The lectures of this Year form two courses. One is devoted to the earlier period of Modern Philosophy. After sketching the transition from Mediaeval to Modern thought, the course gives some account of the Empirical movement started in England by Bacon and Hobbes, and developed by Locke and his school. The Idealistic tendency of speculation during this period is sketched mainly in three movements :—that which began in England with the Cambridge Platonists, and culminated in Berkeley; the German movement originated by Leibnitz, and formulated by Wolf ; the Cartesian movement which culminated in Spinoza. The course closes with a lengthy exposition of KANT's three Critiques.

First term, two hours a week ; second term, one hour a week.

6. The other course is on the History of English Philosophy from Hartley to Herbert Spencer. The lectures discuss the chief characteristics of English thought during the last one hundred and fifty

years, more particularly as shewn in the works of English psychologists and political writers during that time. The writers to whom special attention is given are : in Psychology—PRIESTLEY, HARTLEY, ERASMUS DARWIN, the two MILLS, BAIN, and HERBERT SPENCER ; in Political and Social Science—BURKE, PAINE, GODWIN, PALEY, BENTHAM, MALTHUS. References are also made to minor writers, whose work may be deemed to be of sufficient importance in the general movement and development of philosophy. No text-book is specially recommended ; but the student is expected to read appointed selections from the writers under discussion, as well as to consult LESLIE STEPHEN'S History of English Thought in the Eighteenth Century, and a few chapters in LEWES' History of Philosophy. The principal points emphasized in the lectures are the empirical character of the English school in phychology and metaphysics, and the practical, utilitarian views of English political writers.

Second term ; one hour a week.

Students are expected to write an essay exhibiting an independent study of one of the modern philosophers.

The subjects of examination, in addition to the lectures, will be the following :—

Part I.—Erdmann's History of Philosophy, Vol. II. (Engl. Transl.); James' Principles of Psychology, Vol. II. ; Spencer's First Principles ; Watson's Comte, Mill and Spencer, an Outline of Philosophy ; Mill's System of Logic, Book VI. Any two of these subjects along with the Honour Lectures may be taken as the Additional Course.

Part II.—Aristotle's Nicomachean Ethics ; Zeller's Stoics, Epicureans and Sceptics ; Spinoza's Ethics ; Watson's Selections from Kant ; Maine's Ancient Law.

Mathematics and Astronomy.

Professor :—Alexander Johnson, M.A., LL.D.
Sessional Lecturer :—Rev. H. M. Tory, B.A.

Ordinary

First Year.

1. MATHEMATICS—Arithmetic.—Euclid, Books, 1, 2, 3, 4, 6 (omitting propositions 27, 28, 29), with definitions of Book 5, TODHUNTER'S edition, or HALL AND STEVENS'; the latter is recommended to Candidates for Honours especially. COLENSO, Algebra (Part I.) to end of Quadratic Equations. — GALBRAITH AND HAUGHTON, Plane Trigonometry to beginning of solution of Plane Triangles.
Three hours a week.

Second Year. 2. MATHEMATICS.—Arithmetic, Euclid, Algebra and Trigonometry as before.—Nature and use of Logarithms.—Remainder of GALBRAITH and HAUGHTON's Plane Trigonometry.
One hour a week.

Third Year 3. (*Optional, but open to those only who have studied Mathematical Physics*). — ASTRONOMY—LOCKYER, Elementary Astronomy, English edition ; first five chapters, viz. : The Stars and Nebulae ; The Sun ; The Solar System ; Apparent movements; Time). Students are recommended to use with this an " Easy Guide to the Constellations," by GALL. This subject is taken with Optics.
Hours to be arranged.

Fourth Year. 4. ASTRONOMY.—(*Optional*) GALBRAITH and HAUGHTON's Astronomy or BRINKLEY by Stubbs and Brunnow.—This subject is taken with Optics as one course. The lectures will be given before Christmas.
First term ; two hours a week.

Mathematics and Physics.

Professors (Mathematics) :—A. Johnson, M.A., LL.D.
" (Physics) :—John Cox, M.A.
" " H. L. Callendar, M.A.
Sessional Lecturers (Mathematics, First Year) :—Rev. H. M. Tory, M.A.
Demonstrators in Physics :—Rev. H. M. Tory, M.A., and F. H. Pitcher, B.A.Sc.

Honours. First Year. 5. MATHEMATICS.—HALL and STEVENS, Euclid ; CASEY, Sequel to Euclid ; HALL AND KNIGHT, Advanced Algebra ; TODHUNTER or BURNSIDE AND PANTON Theory of Equations (selected course).
Two or three hours each week.

Second Year. 6. MATHEMATICS.—LOCK, Higher Trigonometry, with MCCLELLAND AND PRESTON, Spherical Trigonometry, Part I. ; SALMON, Conic Sections, chapters 1, 2, 3, 5, 6, 7, and 10 to 13 inclusive ; WILLIAMSON, Differential and Integral Calculus (selected course).
Three hours a week.

Third Year 7. MATHEMATICAL PHYSICS. — MINCHIN, Statics, Vol. I. (selected chapters) ; WILLIAMSON AND TARLETON, Dynamics, Chaps. 1 to 8 inclusive ; BESANT, Vol. I., Hydro-Mechanics, Part I., chaps. 1, 2, 3, 7 ; PARKINSON, Optics.
Two hours a week.

8. MATHEMATICS.—WILLIAMSON, Differential and Integral Calculus and BOOLE or FORSYTH, Differential Equations, or SALMON, Geometry of Three Dimensions, (alternate years).

ASTRONOMY.—GODFRAY.
Two hours a week.

EXPERIMENTAL PHYSICS.—Courses 4 and 6.

Fourth Year.

9. MATHEMATICS.—WILLIAMSON, Differential and Integral Calculus; SALMON, Conic Sections; SALMON, Geometry of Three Dimensions (course selected in text-book); BOOLE or FORSYTH, Differential Equations (selected course).

10. PHYSICAL ASTRONOMY.—GODFRAY, Lunar Theory; or CHEYNE, Planetary Theory; or the Theory of the Tides; NEWTON, Principia, Lib. I., secs. 9 and 11, with the necessary preliminary propositions.

11. MATHEMATICAL PHYSICS.—MINCHIN, Statics, Vol. II., selected chapters: WILLIAMSON AND TARLETON, Dynamics; ROUTH, Dynamics of a Rigid Body (for reference); BESANT, Hydro-Mechanics; PRESTON, Theory of Light; CUMMING, Theory of Electricity.

EXPERIMENTAL PHYSICS.—Courses 5 and 7.

Natural Philosophy.

Professors :— John Cox, M.A.; Hugh L. Callendar, M.A.

Demonstrators :— Rev. H. M. Tory, M.A.; F. H. Pitcher, B.A.Sc.; Howard T. Barnes, M.A.Sc.

I. Mathematical Physics.

Ordinary

1. ELEMENTARY MECHANICS. One hour a week up to February. An introductory course, without Text-book, developing the fundamental principles of Mechanics. One hour a week. **Second Year.**

2. MECHANICS and HYDROSTATICS: *Text-book*, LONEY, Mechanics and Hydrostatics for Beginners. Two hours a week till January. **Third Year.**

3. OPTICS; *Text-book*, GALBRAITH and HAUGHTON. Two hours a week, from January to end of Session. **Third Year.**

II. Experimental Physics.

Third Year. 4. LAWS OF ENERGY, SOUND, LIGHT AND HEAT. *Text-book*, GANOT Physics. Lectures fully illustrated.
Two hours a week.

Fourth Year. 5. ELECTRICITY and MAGNETISM. *Text-book*, GANOT, Physics. Lectures fully illustrated.
Two hours a week.

III. Laboratory Courses.

In Experimental Physics, requiring three hours per week to be spent in practical measurements in the McDonald Physical Laboratory, during the Third and Fourth Years, in conjunction with the Lecture Courses 4 and 5.

Third Year. 6. (*a*) SOUND—Velocity of Sound: Determination of rates of vibration of Tuning Forks: Resonance; Laws of vibration of strings.

(*b*) LIGHT—Photometry; Laws of Reflection and Refraction; Indices of Refraction; Focal Lengths and Magnifying Powers of Mirrors, Lenses, Telescopes and Microscopes; the Sextant, Spectroscope, Spectrometer, Diffraction Grating, Optical Bench, and Polariscopes.

(*c*) HEAT—Construction and Calibration of Thermometers; Melting and Boiling Points; Air Thermometer; Expansion of solids, liquids, and gases; Calorimetry.

Fourth Year. 7. MAGNETISM—Measurements of Pole Strength and Moment of a Magnet; the Magnetic Field; Methods of Deflection and Oscillations; comparison of moments and determination of elements of Earth's magnetism. Frictional Electricity. Current Electricity.—Complete course of measurements of Current Strength, Resistance and Electromotive Force; Calibration of Galvanometers; the Electrometer; comparison of Condensers; Electromagnetic Induction.
Text-Book.—GLAZEBROOK and SHAW, Practical Physics.

N.B.—For Advanced Courses intended for Electrical Engineering Students and Graduates pursuing the study of Physics, see Calendar, Faculty of Applied Science.

Chemistry and Mineralogy.

Professor of Chemistry :—B. J. Harrington, M.A., Ph.D.
Lecturer:—N. Norton Evans, M.A.Sc.
Demonstrator :—Alex. Brodie, B.A.Sc.

Ordinary

1*a*. General Chemistry (*Optional*).—A course of lectures on elementary chemical theory, and on the principal elements and their compounds. The lectures are fully illustrated by means of experiments, and are supplemented by tutorial classes. **First Year**

Two hours a week.

Text-Book.—Remsen's Introduction to the Study of Chemistry.

1*b*. Elementary Practical Chemistry.—Experiments in connection with the above course of lectures performed by the students, and elementary Qualitative Analysis. This class is intended for students in Applied Science, but a few Students in Arts may be admitted.

One afternoon a week.

2. Inorganic Chemistry (*Advanced and Optional*).—The Chemistry of the principal electro-positive elements and their compounds. (Arrangements may be made for this Course for Session 1897-98.) **Second Year.**

3. Organic Chemistry. — Lectures, with occasional demonstrations, on the analysis of organic bodies, calculation of formulae, determination of molecular weights, polymerism, isomerism, etc., followed by a discussion of some of the more important Methane derivatives and their construction. Students intending to enter the Medical Faculty, would find these lectures and the laboratory work connected therewith of great advantage. **Third Year**

One hour a week.

4. Organic Chemistry—Lectures in continuation of those in Course 3, discussing some of the principal Benzene and Pyridine derivatives. Students should have previously taken Course 3. **Fourth Year.**

One hour a week.

5. Analytical Chemistry(Qualitative).—A systematic study of the more important bases and acids, including their detection and separation. The laboratory work is accompanied by explanatory lectures. **Third Year**

Text-book.—Qualitative Chemical Analysis, by ARTHUR A. NOYES.

Six hours a week.

Fourth Year. 6. ANALYTICAL CHEMISTRY (QUANTITATIVE).—Laboratory practice in methods of gravimetric, volumetric and electrolytic Quantitative Analysis. The course is open to those who have taken No. 5.

Text-book.—CLOWES & COLEMAN'S Quantitative Analysis.

Third Year 7. PHYSICAL CHEMISTRY (*Optional*).—A course of lectures on Stœchiometry and Chemical Affinity. Special attention is directed to those parts of the subject which have a direct bearing on the processes of practical chemistry, such as the modern theories of solution and electrolytic dissociation.

One hour a week.

Honours.

Third Year 8. MINERALOGY.—Lectures and demonstrations illustrated by models and specimens in the Peter Redpath Museum. Among the subjects discussed are : Crystallography ; physical properties of minerals dependent upon light, electricity, state of aggregation, etc. ; chemical composition, calculation of mineral formulae, quantivalent ratios, etc. ; principles of classification, description of species.

First term, one hour a week ; second term, two hours a week.

Fourth Year. 9. MINERALOGY. (In continuation of No. 8.).—Description of species, particular attention being paid to those which are important as rock constituents and to the economic minerals of Canada.

First term, two hours a week.

Third Year 10. DETERMINATIVE MINERALOGY.—Laboratory practice in blowpipe analysis and its application to the determination of mineral species.

Thursday, 2 to 5 p.m.

Botany.

Ordinary

Professor :—D. P. Penhallow, B.Sc., M.A.Sc.
Lecturer :—C. M. Derick, M.A.

Second Year. 1. GENERAL MORPHOLOGY. This course is designed to give a thorough general knowledge of the principles of General Morphology and Classification. It comprises :

(*a*) Determination of species from both dry and fresh materials; type studies of Spermaphytes, Pteridophytes, Brophytes, and Thallophytes, with reference to their life histories. GRAY'S Structural Botany, GRAY'S Manual, PENHALLOW'S Outlines of Classification, and Botanical Collector's Guide.

First term, three hours a week.

(*b*) General Morphology and Classification; elements of Histology and Physiology; Biological relations of plants; Geographical Botany.

Second term, two hours a week.

2. ADVANCED ANATOMY. This course, open to students who have taken Botany 1, is designed to give an extended knowledge of vegetable anatomy. It comprises :— **Third Year.**

(*a*) Optics and construction of the microscope; determination of amplifications; micrometry; drawings; section cutting; preparation of microscopic objects; micro-chemical reactions; study of cell contents and tissues, comparative studies of type forms of angiosperms and gymnosperms.

Four hours a week.

* (*b*) A continuation of the course in the Third Year. Critical studies of the structure and development of the Pteridophyta, Bryophyta, Thallophyta and Protophyta. **Fourth Year.**

Four hours a week.

* Students satisfactorily completing this course, will be eligible to the occupation of an investigator's table held by the University at the Wood's Holl Biological Laboratory.

The fee for the Session in each of the above courses, viz. 2 (*a*) and 2 (*b*) is $10. Students are required to supply their own slides and cover glasses.

Zoology.

Professor :—

Ordinary

3. This course will include lectures on elementary Physiology based on HUXLEY'S lessons; a general account of Embryological development; the morphology and classification of the Invertebrata, with a general description of their modes of life, etc.; and the comparative anatomy with the classification of the Vertebrata. As far as possible, the Canadian Fauna will be referred to in the descriptive lectures, which will be illustrated by concurrent demonstrations of microscopical, moist and dry preparations, with dissections of all the leading types. Students have access also to LEUKART'S charts. **Third Year.**

Two hours a week, apart from demonstrations.

Text-Books.—THOMSON's Outlines of Zoology, DAWSON's Hand-book (for Canadian reference).

Fourth Year.

Additional Course.

4. The preparation and study of animal tissues microscopically. This includes killing, hardening, sectioning, staining, mounting, etc. Practical Anatomy, with lectures. The animals dissected will be representative types both Vertebrate and Invertebrate.

Text-Book.—MARSHALL and HURSE's Practical Zoology. Additional fee of $10.

N.B.—Students desiring to take Geology in the Fourth Year are recommended to take Zoology in the Third Year.

Geology and Palæontology.

Ordinary

Professor :—Frank D. Adams, M.A.Sc., Ph.D.

Fourth Year.

1. GENERAL GEOLOGY.—The lectures will embrace a general survey of the whole field of Geology, and will be introduced by a short course on Mineralogy. Especial attention will be devoted to Dynamical Geology and to Historical Geology, including a description of the fauna and flora of the earth during the successive periods of its past history.

The lectures will be illustrated by the extensive collections in the Peter Redpath Museum as well as by models, maps, sections and lantern views. There will be an excursion every Saturday until the snow falls, after which the excursion will be replaced by a demonstration in the Museum.

Text-book.—DAWSON, Hand-book of Geology. *Books of Reference*—DANA, Manual of Geology ; BONNEY, Story of our Planet.

Three hours a week throughout the year, with additional excursions and demonstrations as above stated.

Honours.

Fourth Year.

2. PETROGRAPHY.—The modern methods of study employed in Petrography are first described, and the classification and description of rocks is then taken up.

One lecture a week during the second term. One afternoon a week during the second term will be devoted to special microscopical work in the Petrographical Laboratory.

Books of Reference.— ROSENBUSCH, Mikroskopische Physiographie, and RUTLEY, Rock-forming Minerals.

3. Palæontology.—An extension of the Palaeontology of Course I, with special studies of some of the more important groups of fossils. **Fourth Year.**

One lecture a week during the second term and one demonstration a week, with special studies in the Peter Redpath Museum.

Books of Reference.—Nicholson and Lydekker, Manual of Palaeontology ; Williams, Geological Biology.

4. Practical and Applied Geology.—A description of the methods employed in observing and recording geological facts, concluding with a general treatment of the nature and mode of occurrence of Ore Deposits. **Fourth Year.**

One lecture and one demonstration a week during first term.

Text-books.—Geikie, Outlines of Field Geology ; Kemp, Ore Deposits of the United States.

5. Canadian Geology.—A general description of the Geology and Mineral Resources of the Dominion. **Fourth Year.**

One lecture a week during the second term.

Text-book.—Dawson, Hand-book of Geology.

Books of Reference.—The Reports of the Geological Survey of Canada.

6. Geological Colloquium.—A discussion each week of some Geological topic, references to the literature of which have been given by the Professor in the week preceding. The course is intended to give students some acquaintance with Geological literature, as well as a wider knowledge of the great principles which underlie the Science. **Fourth Year.**

One hour a week in second term.

Additional private reading will also be required of Candidates for Honours.

Students taking any of these courses are entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

Meteorology.

Superintendent of Observatory :—C. H. McLeod, Ma.E.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological instruments and on the general facts of Meteorology.

Pedagogy.

Principal of the Normal School:—S. P. Robins, M.A., LL.D.

Lectures on this subject will be given in the Normal School to undergraduates of the Third and Fourth Years who wish to obtain the Provincial Academy Diploma.

Lecture hour : 3 p.m., Tuesday and Friday.

Elocution.

Instructor:—J. P. Stephen.

Instruction is given in this subject at hours that may be settled at the beginning of the session.

Physical Culture.

Medical Examiner and Instructor :—R. Tait McKenzie, B.A., M.D.

The classes will meet at the University Gymnasium, at hours to be announced at the commencement of the Session. The WICKSTEED SILVER AND BRONZE MEDALS (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the Graduating Class and to students who have had instruction in the Gymnasium for two sessions,—the silver medal to the former, the bronze medal to the latter. (See Regulations appended.)

LECTURES IN THE UNDERGRADUATE COURSE IN THE FACULTY OF ARTS.

SESSION 1897-98.

YEARS	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
FIRST YEAR.	9	Greek.	†Mathematics.	Mathematics.	†Mathematics.	Mathematics.
	10	Mathematics. Latin. (1)	Greek.	Latin.	Hebrew. French.	Greek.
	11	French.	German.	German.	German.	English.
	12	Chemistry.	Hebrew. French.	English.	Latin.	Chemistry.
	2	Practical Chemistry. (1) Latin. (2)	Practical Chemistry. (2)			Practical Chemistry. (3)
	3					
	4					

TIME TABLE.—*Continued.*

YEARS	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
SECOND YEAR.	9	French. German.		French.	Hebrew. German.	French.
	10	Greek.		Logic.	Logic.	†Mathematics.
	11	Mathematics.	Latin.	Botany. †Mathematics.	Latin.	Greek.
	12	Botany. †Mathematics.	Greek.	Latin.	Mod. History.	Mod. History.
	2	Math. Phys.				
	3					
	4					
THIRD YEAR.	9	English.	†Mineralogy(*b*) Greek. †Math. Phys. Hebrew	†English. †Greek.	† English. †Math. Physics.	†Engl. †Math German. †Mineralogy.
	10	†Mental Phil. †English. †Latin. Chaldee.	French. Latin.	Math. Physics. Chaldee.	French. Chemistry.	Rhetoric.
	11	†Greek. Metaphysics.	Zoology.	Metaphysics. †French.	Zoology.	Math. Physics †French.
	12	Latin.	Exp. Physics. †Latin.	Greek, †Mathematics.	Hebrew, Exp. Physics.	Latin.
	2	†Greek. Pract. Chem. †History.	Botany.	Pract. Chem.	†English. Det. Mineralogy. †Latin.	Botany.
	3		†French.	German.	†History.	
	4	†German.	†History.		†Mental Phil. †German.	†History.
FOURTH YEAR.	9	Exp. Physics.	†Mineral. (*a*) Astronomy (*a*) †Engl Hebrew	Geology. Syriac.	Exp. Physics. †French.	Latin. †Mathematics. German.
	10	Geology. Syriac. †Latin.	French. Latin.	Latin. †English. †French.	English Lit.	Geol. †Eng. †Latin. † Math. Phys.
	11	Greek. †English. †Geology.	Moral Phil. † Latin.	Greek. †Mineralogy. (*a*)	Moral Phil. †Greek.	French. †Geology.
	12	Moral Phil. †Greek.	Organic Chem	†Mathematics. †Geol.(*b*) †Greek Miner. Demons.	Hebrew. Astronomy.(*a*)	†Mental Phil. †English.
	2	Pract. Chem. †History.	Botany.	†History. Pract. Chem.	Pract. Chem.	Botany.
	3			German.	†History.	†Mental Phil.
	4	†German.	†History.		†German.	†History.

(*a*) During First Term. (*b*) Second Term. † For Candidates for Honours.

The CHEMICAL LABORATORY is open every day (except Saturday) from 9 a.m. to 5 p.m Practical Chemistry First Year with the Class in Applied Science.

PRACTICAL PHYSICS: Third Year, Monday, 10 a.m. to 1 p.m., or Friday, 2.30 p.m. to 5.30 p.m.; Fourth Year, Wednesday, 2.30 p.m. to 5.30 p.m.

The BOTANICAL LABORATORIES are open daily from 9 a.m. to 5 p.m. Saturday Classes in General Morphology (2nd Year), 11 a.m. to 1 p.m.

ZOOLOGY: Demonstrations on Saturday Forenoons.

N.B.—*The hours in this table are subject to alteration during the session.*

III. UNIVERSITY BUILDINGS, Etc.

The University Library.

The various libraries of the University now contain about 64,000 bound volumes, besides many valuable pamphlets.

The books have been selected with a view to illustrating the various courses of University study. They are, therefore, to a considerable extent, general in character; and the Committee endeavours to provide for the symmetrical growth of the entire library.

There are, however, several large special collections, besides the departmental libraries. The late Mr. Peter Redpath was, for years before his death, engaged in forming the REDPATH HISTORICAL COLLECTION, which is now of great value, and affords unusual opportunities for the study of English History. An important feature of this collection is a series of 3,500 political and religious tracts, which date from 1601 to about the middle of the present reign.

Abundant materials, bearing upon the History of Canada, have been gathered together. Of these the nucleus is formed by the entire library of the late Mr. Frederick Griffin, whose choice books were, some years ago, bequeathed to the University. This branch of the library is being steadily augmented.

The Medical Library, directly controlled by the Faculty of Medicine, is the largest of the departmental libraries, and is one of the most complete collections of its kind in the Dominion.

About 160 current periodicals, literary and scientific, are subscribed for through the various departments of the University. Besides these, the library regularly receives many Serials, Transactions and Proceedings of Societies. The list of both periodicals and serials is being extended yearly.

A new Card Catalogue of the entire library has been for some time in hand, but is not as yet complete.

In the autumn of 1893, the general library was moved to the noble building erected by the late Mr. Peter Redpath. The building affords ample accommodation for two hundred readers, the reading room being exceptionally spacious and convenient. The reading room is open in the evening, and contains a reference library, and leading English and Foreign periodicals.

Although the library is maintained primarily for members of the University, the Corporation has recently provided for the admission, upon certain conditions, of such persons as may be approved by the Library Committee. It is the desire of the Committee to make the library as useful to the entire community as is consistent with the safety of the books and the general interests of the University.

EXTRACT FROM THE LIBRARY REGULATIONS.

1. During the College Session the Library is open daily (except Sundays and general public holidays), from 9 a.m. till 5 p.m. ; and the Reading Rooms from 9 a.m. till 6 p.m., and also from 8 till 10 p.m. On Saturdays, both Library and Reading Rooms close at 5 p.m. During vacations, both Library and Reading Rooms close at 5 p.m., and on Saturdays at 1 p.m.

2. Students in the Faculty of Arts, of Law, or of Applied Science may borrow books on depositing the sum of $5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the Session on the certificate of the Librarian that the books have been returned uninjured.

3. Students in the Faculties of Medicine, or Comparative Medicine, who have paid the Library fee to the Bursar, may read in the Library, and on depositing the sum of $5 with the Bursar, may borrow books on the same conditions as Students in Arts. They are required to present their Matriculation Tickets to the Bursar and to the Librarian.

4. Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as Students, but they are not required to pay the annual Library fee.

5. Books may be taken from the Library only after they have been charged at the Delivery Desk ; borrowers who cannot attend personally must sign and date an order, giving the titles of the books desired.

6. Books in the Reference Library must not be taken from the Reading Room ; and, after they have been used, they must be returned promptly by readers to their proper place upon the shelves.

7. Before leaving the Library, readers must return the books they have obtained, to the attendant at the Delivery Desk.

8. All persons using books remain responsible for them, so long as the books are charged to them, and borrowers returning books, must see that their receipt for them is properly cancelled. Damage to, or loss of books shall be made good to the satisfaction of the Librarian and of the Library Committee. Writing or making any mark upon any book belonging to the Library is unconditionally forbidden. Any persons found guilty of wilfully damaging any book in any way shall be excluded from the Library, and shall be debarred from the use thereof for such time as the Library Committee may determine.

9. Should any borrower fail to return a book upon the date when its return is due, he may be notified by postal card of his default, and be requested to return the book. If the loan is not renewed, or the book returned, after a further delay of at least three days, it may be sent for by special messenger, at the borrower's expense.

10. Before the close of the session, Students in their final year shall return uninjured, or replace to the satisfaction of the Librarian, all books which they have borrowed.

11. Silence must be strictly observed in the Library.

The Peter Redpath Museum.

This building was erected in 1882 by the liberal benefactor whose name it bears. It occupies a commanding position at the upper end of the campus, and besides its central hall and other rooms devoted to the collections, contains a large lecture theatre, class-rooms and work-rooms.

The general arrangement of the collections is as follows :—

1. The Botanical Room on the ground floor contains the Herbarium, consisting of 25,000 specimens of Canadian and exotic plants, and collections illustrating structural and economic botany.

2. On the first floor is a room over the entrance hall, in which are cases containing Archaeological and Ethnological objects, with large slabs of fossil foot-prints on the walls.

3. This room opens into the great Musuem Hall, on either side of which are alcoves with upright and table cases containing the collections in Palaeontology, arranged primarily to illustrate the successive geological systems, and subordinately to this, in the order of zoological and botanical classification, so as to enable the student to see the general order of life in successive periods, and to trace any particular group through its geological history.

4. At the extreme end of the Hall are placed the collections of Minerals and Rocks, arranged in such manner as to facilitate their systematic study. In the centre of the Hall are economic collections and large casts and models.

5. In the upper story or gallery of the great Hall are placed the zoological collections—the invertebrate animals in table cases in regular series, beginning with the lower forms, the vetebrate animals in upright cases, in similar order. THE PHILIP CARPENTER COLLECTION OF SHELLS is especially noteworthy for its arrangement and completeness.

Details as to the several departments of the Museum are given in

the "Museum Guide," and papers or memoirs relating to type specimens in the collections can be obtained from the Museum Assistant. Tickets are issued to students by the Professors in charge of the several departments, and classes of pupils from schools can be admitted on certain days, under regulations which may be learned from the Professors or from the Secretary of the University.

The Macdonald Physics Building.

The McDonald Physical Laboratory contains five storeys, each of 8,000 square feet area. Besides a lecture theatre and its apparatus rooms, the Building includes an elementary laboratory nearly 60 feet square; large special laboratories arranged for higher work by advanced students in Heat and Electricity; a range of rooms for optical work and photography; separate rooms for private thesis work by Students; and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room, with apparatus room attached, for Mathematical Physics, a special physical library, and convenient workshops. The equipment is on a corresponding scale, and comprises: (1) apparatus for illustrating lectures; (2) simple forms of the principal instruments for use by the Students in practical work; (3) the most recent types of all important instruments for exact measurement, to be used in connection with special work and research.

The following extract made from the report for the year 1894-95 of the Physics Building Committee will indicate the general nature and extent of the equipment.

Resistance Standards.—There are thirty standard resistance coils of various patterns, including the B.A., the Board of Trade and the German, with a few others, ranging in value from 1,000 ohms to one ten-thousandth, and adapted for various different purposes. These have been tested and compared, and their values are found to agree as closely as could be expected with the Cambridge certificates, and those of the Reichsanstalt and the makers. The temperature coefficients of a few have also been determined. The comparisons have been made chiefly with Nalder's pattern of the Carey-Foster Bridge.

There is also a duplicate of the Fleming Bridge used at Cambridge, presented by the Duke of Devonshire.

Resistance Boxes.—The collection of resistance boxes includes almost all the best types. There is a Thomson-Varley slide-box by Nalder, which has proved extremely useful and accurate. Among the other boxes, may be mentioned: two megohm boxes and four 100,000 ohm boxes of different patterns; a four dial and a six dial

P. O. box ; and a bar-dial box of Professor Anthony's pattern ; also a compensated resistance box with mercury contacts, reading from 0 to 50 ohms continuously by the Carey-Foster method ; this is extremely useful for the accurate determination of resistances which cannot be made up of any simple combination of standards, and has been accurately calibrated throughout.

For the comparison and determination of small resistances, there is a Kelvin conductivity bridge and a Lorenz apparatus, with the improvements made by Prof. V. Jones, which is now being completed under his supervision.

Current Standards.—There is a Kelvin composite balance, which can also be used as a voltmeter, and wattmeter, and two Siemens dynamometers. The constants of these have been determined by the voltametric method, and found to be accurate to one-half of one per cent. They have been used for calibrating common types of alternate current instruments. There is also a set of 4 large storage cells with convenient commutators and resistances for furnishing large steady currents for the testing of ammeters and low resistances and for other purposes. This equipment is similar to that in use at the Board of Trade in England and in the laboratories of some leading instrument makers.

As an absolute current standard there is a duplicate of the Weber electro-dynamometer made by Latimer Clark for the Committee of the British Association, the coils of which were wound by Clerk Maxwell, and used by Lord Rayleigh in his standard experiments. The coils of this instrument have been rewound and measured, and it is proposed to use it for an absolute determination of the E. M. F. of a Clark Cell.

Insulation and Capacity Tests.—For these and other tests there is a suitable collection of delicate reflecting galvanometers of the astatic, ballistic, differential and D'Arsonval types. The most delicate of these has a resistance of 110,000 ohms, and a figure of merit of upwards of 60,000 megohms with a 20 second swing.

There are eight quadrant electrometers of different types, the chief of which have been set up and used for various insulation and other tests. There is also one Kelvin absolute electrometer, and smaller portable electrometers and gauges on the same principle.

As a standard of capacity there is a cylindrical air condenser of the B. A. pattern.

Its capacity has not yet been determined absolutely. By comparison with our certificated mica standards, it was found to be nearly one two-hundredth of a microfared, the value intended by the maker.

The mica-standards and subdivided boxes have been carefully compared with each other and tested for insulation and absorption. They are above the average in quality and accuracy.

For the purpose of studying the behaviour of insulators under the influence of long continued and intense electric stress, a subject which is now becoming of importance in connection with the transmission of power at very high voltage, there is in preparation a transformer capable of working up to 100,000 volts and of sufficient power to give useful practical results.

Magnetic Tests.—Determinations of the dip and horizontal intensity have been made with the Kew instruments in different parts of the laboratory, and of the horizontal intensity with two other types of magnetometer. The values obtained showed a very satisfactory agreement, and were in all cases verified by the local and bifilar variometers. A preliminary magnetic survey with the portable variometers has been made of all the laboratories in which experiments affected by the horizontal intensity are carried on. The results have been of great utility, and show that the precautions taken in erecting parts of the building with copper pipes and heating apparatus were by no means unnecessary, and might even have been extended with advantage to the elementary laboratories. It was also found that the disposition of the motors and machinery at the other end of the building was such as to produce a magnetic disturbance scarcely appreciable for most purposes in the portions devoted to delicate work.

A complete set of apparatus for testing the magnetic quality of iron and steel by various methods has also been provided. These experiments are mainly carried on in the Engineering Building, but some tests have been made by the magnetometric method for which the Physics Building is more suitable.

Considerable progress has also been made with the equipment for advanced work in Optics, Acoustics, and Heat, but little work has as yet been done by the students in these branches owing to the arrangement of the present courses of study. The collection of apparatus is on a corresponding scale to the electrical equipment, and includes several fine and valuable instruments such as a set of Ewing Seismographs on which records of two earthquakes have already been obtained ; a Rieffler standard clock ; a set of direct-reading electrical thermometers reading to .01 Fahr., which are now being used for determining soil temperatures ; a six inch Rowland grating with mountings and accessories by Brashear ; a complete set of spectrum and Crooke's tubes by Geissler ; mechanical models and apparatus from the Engineering Laboratory and the Instrument Company at Cambridge.

It is expected that in the course of the summer vacation, a complete catalogue of the apparatus will be made and published, which may be of use to outside students and experimentalists who may wish to know what facilities the laboratory may offer for any particular line of research.

Chemical Laboratories.

The existing Chemical Laboratories are three in number, and intended to accommodate from sixty to seventy students at a time. They are supplied wih the ordinary appliances for practical work, including balances, Laurent polariscope, spectroscopes, gas combustion and melting furnaces, apparatus for electrolytic work, for the determination of molecular weights, etc.

As the space is limited, students wishing to take laboratory classes must apply early for places.

NOTE.—The McDonald Chemistry and Mining Building, now in course of erection will provide the University with extensive and completely equipped Chemical Laboratories and Class Rooms of the most approved and modern type. It is hoped that the building will be ready for occupation before the close of the Session of 1897-98.

Botanical Laboratories.

The Botanical Laboratories occupy the upper floor of the central Arts building

The laboratory for general Morphology provides table accommodation for fifty students, and is equipped with all the necessary appliances for the practical study of plants, either fresh or dry.

In connection with this laboratory, a large collection of dried plants is maintained, from which material is drawn for practical study.

Each student is supplied with a dissecting microscope, which he is required to return in good order at the close of the session.

The laboratory for Advanced Anatomy at present affords accommodation for twenty students. Each table is provided with a complete outfit of instruments and reagents. Provision is also made for accurate micrometic work, and for the production of accurate drawings by means of the camera lucida and Leitz's drawing instrument.

More special instruments, including polariscope, spectroscope and photographic apparatus, afford opportunities for detailed studies in these several directions. Section cutting is provided for by King and Thoma-Jung microtomes, together with all necessary appliances for embedding in accordance with the most recent methods.

Ample provision for material of all kinds is found in the resources of the botanic garden, and in a large supply of stock preparations.

An investigator's table held by the University at the Biological Laboratory, Wood's Holl, Massachusetts, is available for such students as may successfully complete the advanced course of the third and fourth years.

Botanic Garden.

The Botanic Garden occupies a commanding situation at the summit of the Cote des Neiges, distant from the College about one and one-half miles. It covers about nine acres, one-third of which is at present laid out.

The planted area includes a large reserve garden in which plants are grown in quantity for purposes of class—room instruction, and the section devoted to the Gamopetalae. The section embracing the Polypetalæ is now in course of development.

The conservatories embrace a continuous series of houses having a total ground area of 4,600 square feet. They include a camellia house, 20 x 60 feet ; a mixed stove, 20 x 80 feet ; a greenhouse, 20 x 60 feet ; and an Australian house, 20 x 30 feet.

The collection comprises an important and somewhat extensive representation of Australasian plants, and type-forms of vegetation from various parts of the world.

During the winter, material for practical study is provided in large quantity to meet the requirements of the College, and of such of the City schools as may have acquired special privileges in this respect.

Students are admitted to the garden and allowed the use of material for practical study, under special conditions. For this purpose, students' tickets are issued at the opening of the session to all those taking the course in Botany.

The public are admitted to the garden without charge, every day, except Sunday.

Petrographical Laboratory.

The Petrographical Laboratory, containing the chief rock collections of the University, is situated in the east wing of the Arts building, and is arranged for the use of Honour and Graduate students It is provided with a number of petrographical microscopes by Seibert and Crouch, as well as with models, sets of thin sections, electro-magnets, heavy solutions, etc., for petrographical work.

For advanced work and petrographical investigation Dr. Adams' extensive private collection of rocks and thin sections is available, for purposes of study and comparison.

Observatory.

Latitude, N. 45° 30′ 17″. Longitude, 4^h 54^m $18^s.67$.

Height above sea level 187 ft.

Meteorological Observations are made every fourth hour, beginning at 3 h. o. m. Eastern standard time; also at 8 h. o. m ; 20 h. o. m. independent series of bi-hourly temperature observations is also made. The principal instruments employed are two standard mercurial barometers ; one Kew standard thermometer ; two Pastorelli thermometers ; one maximum thermometer ; one minimum thermometer; one set of six self-recording thermometers, with controlling clock, battery, etc. ; two anemometers ; one wind vane (wind-mill pattern), one anemograph, with battery, etc. ; one sunshine recorder ; one rain-band spectroscope and one rain gauge.

The Anemometer and Vane are on the summit of Mount Royal, at a point about three-quarters of a mile northwest of the Observatory. They are 57 feet above the surface of the ground and 810 feet above sea level.

Soil temperatures are observed, in co-operation with the Physical Laboratory, by means of platinum thermometers at depths ranging from one inch to nine feet.

The Astronomical Equipment consist of :—The Blackman Telescope (6¼ in.) ; a photoheliograph (4½ in.) ; a 3¼ in. transit with striding level, etc. ; a prismatic (8 c.m.) transit instrument also arranged as a zenith telescope, a 2 in. transit in the prime vertical ; two collimating telescopes; one sidereal clock; one mean time clock; one sidereal chronometer ; one mean time chronometer ; one chronograph ; batteries, telegraph lines, and sundry minor instruments.
batteries, telegraph lines and sundry minor instruments

Observations for clock errors are made on nearly every clear night. Time exchanges are regularly made with the Toronto Observatory. Time signals are distributed throughout the city by means of the noon time-ball, continuous clock-signals, and the fire-alarm bells ; and to the country, through the telegraph lines.

The longitude of the Observatory was determined in 1892 by direct telegraphic connection with Greenwich, with exchange of observers and instruments. The position is believed to be the most accurately determined in America.

Part Second.

The next session of this Faculty will begin on September 15th, 1897, and will extend to April 30th, 1898.

I. REGULATIONS FOR ENTRANCE.

Students in the Faculty of Arts are classified as Undergraduates or Partial Students.

Undergraduates.

Undergraduates alone can proceed to the degree of B.A. Candidates for admission to the First Year, as Undergraduates, are required to pass the First Year Entrance Examination. Two examinations for entrance are held in each year, as follows :

(1) That held in the first week of June, concurrently with the examinations for Associate in Arts.

Note to Heads of Schools.—Candidates for entrance may present themselves in June at McGill College ; or papers may be sent to schools at a distance, if the following conditions are complied with :—

(*a*) The names of Deputy Examiners must be submitted for approval, to the Secretary of the University, on or before May 1st ; and (*b*) the application must be accompanied by a list of candidates.

(2) That held at the opening of the session, on September 15th, and following days, in McGill College alone.

The following regulations with regard to the First Year Entrance Examination are in force :—

1. Any candidate who fails in one and not more than one subject at the September Entrance Examination may pass an equivalent examination at Christmas, or at the following Sessional Examinations, in the precise part of the subject in which he failed. In this regulation, Classics, Mathematics, and English are each regarded as a single subject.

2. The Entrance Examinations for the First Year will be held twice only in the year, viz., on the days in June and September appointed in the Calendar. Special arrangements may be made for the examination of candidates who are prevented from complying with the above regulation by severe illness or domestic affliction.

As the examination is intended as a test of qualification for admission to the classes of the University, certificates of passing are not granted except to those who subsequently attend lectures. Candidates who have passed the examination are not matriculated until they have paid all the prescribed fees for the session and complied with the other University regulations. (See the Directions given, p. 47.)

First Year Entrance Examination.

For Passing only.

Examinations begin on June 1st in McGill College and local centres; on September 15th in McGill College only.

Greek.— XENOPHON, Anabasis, Book I.; Greek Grammar.

Latin. — CÆSAR, Bell. Gall., Books I. and II.; and VIRGIL, Aeneid, Book I.; Latin Grammar.

In both Greek and Latin, Translation at sight and Prose Composition (sentences or easy narrative, based upon the prescribed prose text), will be required.

At the September, but not at the June, examination, other works in Greek or Latin equivalent to those specified may be accepted, if application be made to the Professors of Classics at least a fortnight before the day of examination.

Mathematics—Arithmetic, Elementary rules, Vulgar and Decimal Fractions, Proportion, Percentage, Simple Interest, etc. Square root, and a knowledge of the Metric System; Algebra, Elementary rules, Fractions, Factors, Equation of the First Degree, Simultaneous Equations of the First Degree, Indices, Surds and easy Quadratics; Problems leading to equations, Binomial Theorem; Euclid's Elements, Books I., II., III. with easy deductions.

English.—Writing from Dictation. *Grammar.*—A paper on English Grammar, including Analysis. The candidate will be ex-

pected to show a good knowledge of Accidence, as treated in any grammar prepared for the higher forms of schools. A similar statement applies to *grammatical* Analysis, in which the nomenclature used by MASON will be preferred. The complete English Grammar published in SONNENSCHEIN'S PARALLEL GRAMMAR SERIES may be regarded as giving the minimum amount of information expected. *English History.*—Candidates will be required to give the chief details of leading events. While any text-book written for the upper forms of schools may be used in preparation for the examination, GARDINER'S Outline of English History (Longmans) is recommended. *Composition.*—Candidates will write a short essay on a subject given at the time of the examination. *Literature.*—SHAKSPERE'S Richard II, ed. Deighton (Macmillan), and SCOTT'S Lady of the Lake, ed. Stuart (Macmillan).

Note.—Candidates may take Arithmetic, and all the English subjects except Literature, at the June Examination, and the remainder at the Entrance Examination of the following year.

French.—Grammar up to the beginning of Syntax. An easy translation from French into English ; and from English into French; Dictation or similar exercise. Candidates are expected to be able to write French without gross mistakes in spelling or grammar ; special credit will be given for evidence of familiarity with the spoken language.

Or, instead of French.

German.—The first eighty pages of JOYNES' German Reader (or equivalent amount) together with German accidence and translation into German as in the First Part of VANDERSMISSEN'S German Grammar (or equivalent amount).

Note.—Students of Theological Colleges who propose to take Hebrew are exempt from examination in Modern Languages.

June Candidates

Candidates who at the examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

Candidates who fail in one or more subjects at the June examination, or who have taken part only of the examination and present themselves again in the following September, will be exempted from examination in those subjects only in which the Examiners may have reported them as specially qualified.

Ontario Candidates

At the June examination, candidates from Ontario may present an equivalent amount from the books prescribed for the Junior Matriculation Examination of the University of Toronto.

The Matriculation or Junior Leaving Examination accepted by the Universities of Ontario is accepted by the Faculty, in so far as the subjects of their programme satisfy the Examiners of the Faculty, *i. e.*, when the subjects taken are the same as, or equivalent to, those required in McGill University.

In the case of Candidates from Ontario, Second Class non-professional certificates will be accepted *pro tanto* in the Examination.

Normal School Candidates

For qualifications required of Normal School Students, see Normal School Regulations.

Candidates for the Six Years' Course in Arts and Medicine will be allowed to present themselves for the Arts Entrance Examination in 1897, on the Course appointed for 1898, provided that they are prepared to follow a course of study subsequently which shall be deemed by the Faculty equivalent to that required of candidates entering in 1898.

Higher Examination for First Class, Second Class, and Passing.

This Examination will be held on September 15th and following days, in McGill College only. The First Year Exhibitions will be awarded in accordance with the results.

Greek.—HOMER, Iliad, Bk. IV. or I.; XENOPHON, Anabasis, Bk. I.; HOMER, Odyssey, Bk. VII. or XI.

Latin.—CICERO, in Catilinam, Orat. I. and II.; or HORACE, Odes, Book I.; CÆSAR, Bell. Gall., Bks. I. and II. or II. and III.; VIRGIL, Aeneid, Bk. I. or III.

A paper on Greek and Latin Grammar.

Translation at sight from the easier Greek and Latin authors.

The Examination will include Prose Composition in both Greek and Latin.

Mathematics.—Euclid, Books I., II., III., IV.; Algebra to end of Harmonical Progression (Colenso); Arithmetic.

English.—*Grammar.*—An advanced knowledge of this subject will be required, and, in addition, some acquaintance with the historical development of English, as illustrated in common and important word-forms. The candidate is recommended to read MASON'S English Grammar. *English Literature.*—The works to be read are those selected for the First Year Examination for Passing, with the addition of MILTON'S L'Allegro and other short poems, ed. Bell (Macmillan).. *Composition.*—The candidate, will be required to write an essay on some subject connected with the literature prescribed. *History.*—A paper bearing on the chief landmarks in European History will be set. Attention should be given to great movements of thought, and to the courses and results of important wars. LAVISSE'S General View of the Political History of Europe (Longmans) will serve to indicate the character of the knowledge required. *Grammar.*—The candidate will be expected to supplement Mason's Grammar by using MORRIS'S Historical Outlines of English Accidence (Macmillan), as a book of reference.

French Grammar.—Syntax, in addition to the grammar of the Entrance Course. Easy translation from French into English, and English into French.

For September, 1898. Syntax, in addition to the Grammar of the Entrance Course. TH. GAUTIER, Le Capitaine Fracasse. J. MACÉ, Histoire d'une Bouchee de Pain. Oral Examinations.

The First Year Exhibitions will not be awarded unless an adequate standard of merit has been reached ; but in awarding the Exhibitions of higher value to the successful candidates, the results of an examination in the following subjects will also be taken into account :—

1. Higher Composition, and Translation at Sight (Latin and Greek).

2. **Euclid,** Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. **English** :—Henry Morley's First Sketch of English Literature, Chaps. VII. and VIII.

For further particulars concerning First Year Exhibitions, see p. 70.

Second Year Entrance Examination.

Candidates may qualify for entrance the Second Year by passing one of the following examinations, namely : the First Year Sessional Examination, held in the previous April, or the Second Year Ordinary Entrance Examination, held in September, or the Second Year Exhibition Examination which is likewise held in September.

Second Year Ordinary Entrance Examination.

This examination begins September 15th, and is held at McGill College only.

Subjects :—

Greek.— XENOPHON, Hellenics, I. and II. ; DEMOSTHENES, Olynthiacs, I. and II.; EURIPIDES, Alcestis; Easy selections from XENOPHON (Philpotts and Jerram, Clarendon Press); Grammar and Prose Composition ; Translation at sight.

Latin.—VIRGIL. Aeneid, Book VI. ; CICERO, Orations against Catiline ; LIVY, Bk. I. Grammar and Prose Composition. Translation at sight.

Other works in Greek or Latin equivalent in amount to those specified may be accepted by the Professors of Classics, if application be made to them at least a fortnight before the day of examination.

Euclid.—Books, I., II., III., IV., VI., with defs. of Book V. (Omitting Propositions 27, 28, 29 of Book VI.)

Algebra.—To end of Quadratic Equations (as in Colenso's Algebra).

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary Rules, Proportion, Interest, Discount, etc., Vulgar and Decimal Fractions, Square Root, Metric System.

English.—The subjects are the same as those at present prescribed for the First Year Examination for Passing, but the examination is of a more advanced character.

French.—The Examination will be conducted on lines similar to those mentioned for the First Year, but a higher standard will be exacted, the minimum requirement being a knowledge sufficient to enable the Candidate to join the regular class.

Chemistry.—The Chemistry of the non-metallic Elements and of the more common metals.

Medical Students.—Partial Students.—Students of other Universities.

Medical Students and Candidates for entrance into the first year of the Faculty of Medicine may pass in the above entrance examinations.

N.B.—Candidates for the six years' course in Arts and Medicine may, in 1897, be exempted from Greek, under the regulations prescribed for 1898. (See p. 75).

Partial Students.—Candidates for admission as Partial Students may attend any class open to them, without previous examination, provided they give the Professor satisfactory evidence of their ability to proceed with the work of the course.

Students of other Universities may be admitted, on production of certificates, to a like standing in this University, after examination by the Faculty.

For changes in the regulations for Entrance, in 1898, see Appendix, pp. 75-76.

General Regulations.

Every student is expected to state at entrance the name of the religious denomination to which he belongs, and of the Minister under whose care he desires to be placed.

Lists of the students belonging to the several denominations with the information thus given shall be sent, at the beginning of each session as soon as the classes are fully formed, to the Secretary's office, where they shall be available for reference.

Every student is required to sign the following

Declaration.

"I hereby declare that I will faithfully observe the statutes, rules, and ordinances of this University of McGill College, to the best of my ability."

Directions to Candidates for Matriculation or Admission.

Candidates are required :—

(a) To present themselves to the Dean at the beginning of the session, and fill up a form of application for matriculation or admission.

(b) To pass or to have passed the required examinations (p. 41). Candidates claiming exemption, according to the regulations above given, from examination in any subject on the ground of examinations previously passed, must present certificates of standing in the latter. Candidates must pay a fee of $5 before admission to the entrance examination in September. (See Fees, p. 68).

(c) To procure tickets from the Registrar (p. 69), and to sign the declaration above given.

(d) To present their tickets to the Dean. (Fine, etc., for delay stated on p. 69.)

(e) To provide themselves with the Academic dress (p. 67.)

II. REGULATIONS FOR DEGREES IN ARTS.

Regulations for the Degree of B.A.

After passing the First Year Matriculation Examination, an Undergraduate, in order to obtain the Degree of B.A., is required to attend regularly the appointed courses of lectures for four years, and to pass the required Examinations in each year. A student cannot proceed with his course unless he has passed each Examination in its assigned order. If he fail at any one of these Examinations, he must pass it before being allowed to proceed with his course. Undergraduates are arranged in Years, from First to Fourth, according to their academic standing.

1. Ordinary Course for the Degree of B.A.

N. B. The Roman numerals used in the following conspectus have no reference to any other parts of the Calendar—whereas the Arabic numerals refer to the numbering of the courses on pp. 4-30; for example, Greek, 2. refers to the second course given under the head of Classical Literature and History, p. 4.

First Year.

I. Greek, 1.
II. Latin, 1.
III. English Literature, 1.
IV. French, 1.
V. German, 1. (Optional—instead of IV.)
VI. Hebrew, 1. (Optional—instead of IV.)
VII. Mathematics, 1.
VIII. Chemistry, 1. (Optional in 1897-98.) (Medical Students may substitute one-half of the First Year Chemistry course of their Faculty.)

Second Year.

IX. Greek, 2.
X. Latin, 2.
XI. French, 2.
XII. German, 2. (Optional—instead o XI.)
XIII. Hebrew, 2. (Optional—instead of XI.)
XIV. History, 1.

XV. Mental and Moral Philosophy, 1.
XVI. Mathematics, 2.
XVII. Mathematical Physics, 1. (Medical students may substitute the second half of the Chemistry course of their Faculty for XV and XVII.)
XVIII. Botany, 1. (Medical Students may substitute the Botany course of their Faculty.)

Third Year.

XIX. Greek, 3.
XX. Latin, 3. (Optional—instead of XIX.)
XXI. Mathematical Physics, 2.

(In addition to the above, the Student will take one subject from Div. (a), a second from Div. (b), and a third from either.)

Div. (a).

XXII. Greek, 3. (If XX has been taken.)
XXIII. Latin, 3. (If XIX has been taken.)
XXIV. English and Rhetoric, 3.
XXV. Mental Philosophy, 2.
XXVI. French, 3. (If IV and XI have been taken.)
XXVII. German, 3. (If V and XII have been taken.)
XXVIII. Hebrew, 3.

Div. (b).

XXIX. Optics, 3. and Descriptive Astronomy, 3. (Open to Students who have taken XXI.)
XXX. Experimental Physics, 4. (Open to students who have taken XXI.)
XXXI. Laboratory Course in Physics, 6.
XXXII. Botany, 2a.
XXXIII. Zoology, 1. Physiology and Histology, or Anatomy and Practical Anatomy, may, by Medical Students only, be substituted for two courses of this Division.

Fourth Year.

XXXIV. Greek, 4.
XXXV. Latin, 4. (Optional—instead of XXXIV.)
XXXVI. Moral Philosophy, 3.
XXXVII. Mathematical Physics, 2. (Optional instead of XLIV.)

(In addition to the above, the Student will take one subject from Div. (a), a second from Div. b), and a third from either.)

Div. (a).

XXXVIII. GREEK, 4. (If XXXV has been taken.)
XXXIX. LATIN, 4. (If XXXIV has been taken.)
XL. ENGLISH LITERATURE, 4.
XLI. FRENCH, 4. (If XXVI has been taken.)
XLII. GERMAN, 4. (If XXVII has been taken.)
XLIII. HEBREW, 4.

Div. (b).

XLIV. ASTRONOMY, (4) AND OPTICS, 3. (If XXI has been taken.)
XLV. EXPERIMENTAL PHYSICS, 5.
XLVI. LABORATORY COURSE IN PHYSICS, 7.
XLVII. BOTANY, 2b.
XLVIII. MINERALOGY AND GEOLOGY, 1.

N.B.—Students claiming exemptions cannot count XLIV and XLV as subjects for the B.A. Examinations, unless they have taken XXI.

For details of each subject, see Courses of Lectures, pp. 4–30.

A Candidate who seeks to obtain a B.A. Ordinary Degree of the First Class must fulfil the following conditions. He must not only obtain the required aggregate of marks (viz., three-fourths of the maximum), but he must also obtain First Class standing in three of the departments, and not less than Second Class in the remainder.

Declaration.

Every Candidate for the Degree of B.A. is required to make and sign the following declaration :

"Ego———polliceor sancteque recipio me pro meis viribus studiosum fore communis hujus Universitatis boni, et operam daturum ut ejus decus et dignitatem promoveam."

Notes on the Ordinary Course for B. A.

Additional Courses. Third and Fourth Year Students are not restricted to the choice of two distinct subjects in one of the above divisions. They may select one subject only, together with an Additional Course in the same subject, or in any other of the subjects which they have chosen, in which such Additional Course may be provided by the Faculty ; the above rules, however, must be complied with, and Students must have been placed in the First Class in the corresponding subject at the preceding Sessional Examinations, viz. :—Intermediate or Third Year, according to standing.

The Additional Course is intended to be more than equivalent, in the amount of work involved, to any of the other subjects in the Division.

(For details of Additional courses provided, see pp. 52-53.)

French and German.

Undergraduates are required to study either French or German for the first two years,—the same language in each year.

Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take throughout the following Session the language in which he has failed.

Hebrew.

Students may take Hebrew instead of French or German.

Professional Students.

For arrangements enabling Students in Medicine or Applied Science to take the course in Arts also, and obtain B.A., with B. Ap. Sc. or M.D., in six years, see p. 60.

Partial Students.

Undergraduates who have been previously Partial Students, and have in this capacity attended a particular Course or Courses of Lectures, may, at the discretion of the Faculty, be exempted from further attendance at these Lectures ; but no distinction shall in consequence be made between the examination of Undergraduates and of those regularly attending Lectures.

2. Honour Courses.

Honours of First, Second, or Third Rank will be awarded to successful candidates, in any Honour Course established by the Faculty, provided they have passed creditably the ordinary Examinations in all the subjects proper to their year.

The Honour lectures are open to Undergraduates only, and no Undergraduate is permitted to attend them unless (*a*) he has been placed in the First Class in the subject at the preceding Sessional Examination, if there be one ; (*b*) has satisfied the Professor that he is otherwise qualified; and (*c*) while attending lectures makes progress satisfactory to the Professor. In case his progress is not satisfactory, he may be notified by the Faculty to discontinue attendance.

Candidates for Honours in the Second Year.

Honour Exemptions.

A Candidate for Honours in the Second Year, who has obtained Honours in the First Year, may claim exemption from the lectures and examinations in Modern Languages, or Hebrew, or Botany. He must, however, inform the Dean at the beginning of the Session that he intends to claim exemption from a particular course.

Candidates for Honours in the Third Year.

A Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Examinations of the Second Year have taken First or Second Rank Honours, if Honours be offered in the subjects, or if not, First Class at the Ordinary Sessional Examinations in the subject in which he proposes to compete for Honours, and stand higher than Third Class in not less than half of the remaining subjects ; such Candidate shall be entitled in the Third Year to exemption from lectures and examinations in any one of the subjects of the Year (see p. 49), except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary Undergraduate.

Candidates for B. A. Honours.

A Student who has taken First or Second Rank Honours in the Third Year, and desires to be a Candidate for B.A. Honours, shall be required to attend two only of the courses of lectures given in the the ordinary departments, and to pass the two corresponding examinations only, at the ordinary B.A. Examination. A Candidate, however, who at the B.A. Examinations obtains Third Rank Honours, will not be allowed credit for these exemptions at the end of the Session, unless the Examiners certify that his knowledge of the whole Honour Course is sufficient to justify it.

Note.—For subjects of Ordinary Course see pp. 49, 50.

Honour and Additional Courses.

(N.B.—The numbers which stand after the Academic years refer to the corresponding numbers of the Courses given on pp. 4-30.)

1. Classical Literature and History.

THIRD YEAR HONOURS. Greek, 5.
Latin, 5.

FOURTH YEAR HONOURS, Greek, 6.
Latin, 6.

2. English Language and Literature.

THIRD YEAR HONOURS, 6, 8, 10, 12, 14.
THIRD YEAR ADDITIONAL, 6 or 10.
FOURTH YEAR HONOURS, 5, 7, 9, 11, 13, 15.
FOURTH YEAR ADDITIONAL, 7 or 11 or 15.

3. French.

THIRD YEAR HONOURS, 5.
FOURTH YEAR HONOURS, 6.

4. German.

THIRD YEAR HONOURS, 5*a* and 6*b*.
THIRD YEAR ADDITIONAL, 5*a*.
FOURTH YEAR HONOURS, 6*a* and 6*b*.
FOURTH YEAR ADDITIONAL, 6*a*.

5. Semitic Languages.

THIRD YEAR HONOURS, 5*a* and 5*b*.
THIRD YEAR ADDITIONAL, 5*b* without Literature.
FOURTH YEAR HONOURS, 6*a* and 6*b*.
FOURTH YEAR ADDITIONAL, 6*b* without Literature.

6. History.

THIRD AND FOURTH YEAR HONOURS, 3, 4.

7. Mental and Moral Philosophy.

THIRD YEAR HONOURS, 4.
FOURTH YEAR HONOURS, 5, 6.

8. Mathematics and Physics

FIRST YEAR HONOURS, 5.
SECOND YEAR HONOURS, 6.
THIRD YEAR HONOURS, 7, 8.
FOURTH YEAR HONOURS, 8, 9, 10, 11.

9. Mineralogy.

THIRD YEAR HONOURS, 8, 10.
FOURTH YEAR HONOURS, 9.

10. Chemistry

THIRD YEAR ADDITIONAL, 3, 5.
FOURTH YEAR ADDITIONAL, 4, 6.
Courses 2 (*Second Year*) *and* 7 (*Fourth Year*) *are optional.*

11. Zoology.

FOURTH YEAR ADDITIONAL, 4.

12. Geology.

FOURTH YEAR HONOURS, 2, 3, 4, 5, 6.

NOTE.—By an order of the Lieutenant-Governor of Ontario in Council Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for first-class Certificates for Grades "A. and B."

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3. Regulations for the Degree of M.A.

1. A Candidate must be a Bachelor of Arts of at least three years standing.

Thesis.

2. He is required to prepare and submit to the Faculty a thesis on some literary or scientific subject, under the following rules :—

(a) The subject of the thesis must be submitted to the Faculty before the thesis is presented.

(b) A paper read previously to any association, or published in any way, cannot be accepted as a thesis.

(c) The thesis submitted becomes the property of the University, and cannot be published without the consent of the Faculty of Arts.

(d) The thesis must be submitted before some date to be fixed annually by the Faculty, which date must not be less than two months before the Candidate proceeds to the Degree.

N.B.—The last day in the session of 1897-98 *for sending in Theses for M.A. will be Jan.* 31*st*, 1898.

Examinations.

3. All Candidates, except those who have taken First or Second Rank B.A. Honours, or have passed First Class in the Ordinary Examinations for the Degree of B.A., are required to pass an examination also, either in Literature or in Science, as each Candidate may select.

(a) The subjects of the Examination in *Literature* are divided into two groups as follows :—

Group A.—LATIN, GREEK, HEBREW.

Group B.—FRENCH, GERMAN, ENGLISH.

(b) The subjects of the Examination in *Science* are divided into three groups :—

Group A.—PURE MATHEMATICS (advanced or Ordinary), MECHANICS (including Hydrostatics), ASTRONOMY, OPTICS.

Group B.—GEOLOGY and MINERALOGY, BOTANY, ZOOLOGY, CHEMISTRY.

Group C —MENTAL PHILOSOPHY, MORAL PHILOSOPHY, LOGIC, HISTORY OF PHILOSOPHY.

(c) Every candidate in Literature is required to select for Examination two subjects out of one group in the *Literature* section, and one out of the other group in the same section. Every Candidate in Science is required to select two out of the three groups in the *Science* section ; and in one of the groups so chosen to select for Examination two subjects, and in the other group one subject.

(d) One of the subjects selected as above will be considered the principal subject (being so denoted by the candidate at the time of application), and the other two as subordinate subjects.

(e) The whole examination may be taken in one year, or distributed over two or three years, provided the examination in any one subject be not divided.

For further details of the examination, application must be made to the Faculty before the above date. For fees, see p. 68. In case of failure, the candidate may present himself in a subsequent year without further payment of fees.)

NOTE.—Candidates who obtained the degree of B.A. before 1884, may proceed to the degree of M.A. under the regulations in force previous to 1884.

Lectures to Bachelors of Arts.

Lectures are open to Bachelors of Arts who are candidates for M.A., the sessional examinations corresponding to these lectures being reckoned as parts of the M.A. examination. The subjects are Greek, Latin, English, French, German, History, Mental and Moral Philosophy, Chemistry, Botany, Geology and Mineralogy.

4. Regulations for the Degree of LL.D.

This degree is intended as a recognition of special study by Masters of Arts in some branch of Literature or Science. The thesis or short printed treatise referred to below is regarded as the chief test of the candidate's mastery of the subject he has chosen. A very wide range of choice is allowed in order to suit individual tastes.

The following are the regulations :—

1. Candidates must be Masters of Arts of at least twelve years standing. Every candidate for the Degree of LL.D. in Course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a thesis on some Literary or Scientific subject which has been *previously approved by the Faculty.* The thesis must exhibit such a degree of Literary or Scientific merit, and give evidence of such originality of thought or extent of research as shall, in the opinion of the Faculty, justify recommendation for the degree.

N.B.—The subject should be submitted before the Thesis is written.

2. Every Candidate for the Degree of LL.D. in Course is required to submit to the Faculty of Arts, with his thesis, a list of books treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and in which he shall be examined, unless otherwise ordered by vote of the Faculty. For fees, see p. 68.

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5. Examinations.

(A) College Examinations.

For Students of McGill College only.

1. There are two examinations in each year, viz., at Christmas and April. Successful students are arranged in three classes at the April examinations.

In the Fourth Year only, there is no Sessional Examination ; the University Examination for B.A. takes its place.

2. Undergraduates who fail in one subject at the Sessional Examinations of the First or of the Second Year are required to pass a Supplemental Examination therein in the following September. Should they fail in this Examination, they must in the following Session attend the Lectures and pass the Examination in the same subject, in addition to the regular course, or pass the Examination only, without attending Lectures, at the discretion of the Faculty.

3. Failure in two or more subjects at the Sessional Examinations of the First or of the Second Year, or in one subject at the Third Year Sessional Examinations, involves the loss of the Session. The Faculty may permit the student to recover his standing by passing a Supplemental Examination at the beginning of the following Session.

4. A list of those to whom the Faculty may grant Supplemental Examinations in the following September will be published after the Sessional examination. The time for the Supplemental Examination will be fixed by the Faculty ; the examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

(B) University Examinations.

For Students of McGill College and of Colleges affiliated in Arts

I. For the Degree of B.A.

There are three University Examinations : The Matriculation, at entrance ; the Intermediate, at the end of the Second Year ; and the Final, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated on p. 42.

2. In the Intermediate Examination, the subjects are Classics, Pure Mathematics, Logic, and Modern History, or English Literature, with one Modern Language, or Botany. Students are allowed to take Hebrew instead of a Modern Language. The subjects of the examination in 1898 are as follows :—

Intermediate.

Greek. — THUCYDIDES, (Moore's Easy Selections, (pp. 47 to 111, Longmans) ; SOPHOCLES, Electra. Prose Composition and Translation at sight of Greek (easy narrative) into English. General questions will also be set,—in History, on the Period of Athenian Supremacy (Cox's Athenian Empire, Longmans' Epochs of Ancient History with Abbott's Pericles (Putnams), and in Literature on the outlines as contained in JEBB'S Primer of Greek Literature (pp. 1 to 100), (Macmillan).

A paper will also be set on Plato, Crito and Cebetis Tabula.
(SUMMER READINGS, see p. 5).

Latin. — VIRGIL, Aeneid, Book VII. Latin Prose Composition and Translation at Sight of Latin into English ; History, from the Tribunate of Gaius Gracchus to the Battle of Actium (Shuckburgh's History of Rome, Macmillan) ; Literature : Wilkins Primer (Macmillan).

A paper will also be set on Cæsar, De Bello Gallico, Bk. III.
(SUMMER READINGS, see p. 7.)

Mathematics.—Arithmetic.
Euclid, Books I., II., III., IV., VI., and defs. of Book V.
Algebra, to Quadratic Equations inclusive (as in Colenso).
Trigonometry, including use of Logarithms.

Logic.—JEVONS' Elementary Lessons in Logic.

English.—(For affiliated colleges).— SPALDING'S History of English Literature ; LODGE'S History of Modern Europe, 1789-1878. Essay on a subject to be given at the time of the Examination.

European History.—(For McGill College Students) as on p. 17. With one of the following :—

Botany.—(For McGill College Students.) See p. 26.

French.—V. HUGO, Notre Dame de Paris ; TH. GAUTHIER, Le Roman de la Momie ; MME. DE STAEL, Corinne. Translation into French :—Rasselas ; Grammatical questions.

German.—VANDERSMISSEN and FRASER, German Grammar; JOYNES German Reader; FREYTAG, Die Journalisten; UHLAND, Ballads and Romances (Macmillan's Foreign School Classics); JENSEN, Die braune Erica. Translation at Sight; Dictation; Colloquial exercises.

Hebrew.—Genesis. chap. IV. to VIII; Exodus, XX; Deuteronomy, V. Exercises: Hebrew into English, and English into Hebrew. Syntax. Reading of the MASORETIC notes, the Septuagint version and the Vulgate.

3. For the Final or B.A. Ordinary Examination the subjects appointed are the obligatory subjects of the Third and Fourth Years, viz., Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics, or Astronomy and Optics); Moral Philosophy; and those three subjects which the Candidate has selected in the Third and Fourth Years. See pp. 49, 50.)

Final.

Greek.—Plato, Protagoras; Euripides, Orestes; Composition and Translation at sight; paper on the Constitutional History of Athens, Greek Literature and Antiquities. A Paper will also be set on "The Story of Achilles," (Pratt & Leaf, Macmillan.) SUMMER READINGS (see p. 5.)

Latin—Cicero, Tusculan Disputations, Book I.; Juvenal, Selected Satires. Composition and Translation at Sight. History of the Roman Empire to the reign of Domitian. A Paper will also be set on Virgil, Aeneid, I.-III. (SUMMER READINGS see p. 8.)

Mathematical Physics.—Mechanics and Hydrostatics, as in LONEY'S Mechanics and Hydrostatics; or Optics and Astronomy, as in GALBRAITH and HAUGHTON or BRINKLEY.

Mental and Moral Philosophy.—MURRAY'S Introduction to Ethics.

Natural Science.—(*a*) Mineralogy and Geology, *or* (*b*) Botany. Practical Geology and Palaeontology (Additional); *or* Practical Chemistry (Additional).

Experimental Physics.—Electricity and Magnetism. (See courses of Lectures, p. 24.)

History.—(For affiliated Colleges.) MYERS, Mediaeval and Modern History; BRYCE, Holy Roman Empire (omit Chaps. 6, 8, 9, 13, and Supplementary Chapter).

English Literature.—(for McGill College.) The Course on English Literature for the Fourth Year, p. 10.

French.—The Course on French for the Fourth Year, p. 13.

German.—The Course on German for the Fourth Year, p. 15.

Hebrew. — ISAIAH, to XII; PSALMS, XLVI to LV; GESENIUS Grammar; HARPER, Elements of Syntax; Reading of the Masoretic notes, the Septuagint Version and the Vulgate. Translation at Sight.

N.B.—For Additional Courses on above subjects see pp. 52-53.

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6. Exemptions for Students in Professional Faculties.

General Regulations.—Students of the Third and Fourth Years, matriculated in the Faculties of Law, or Medicine, or Applied Science, or in any affiliated Theological College, are entitled to exemption from any one of the Ordinary subjects required in the Third and Fourth Years. (For rule concerning Special Certificates, see p. 62.)

To be allowed these privileges in either year, they must give notice, at the commencement of the session, to the Dean of the Faculty of Arts, of their intention to claim exemptions as Professional Students, and must produce, at the end of the session, certificates of attendance on a full course of Professional Lectures during the year for which the exemption is claimed.

Medicine. Students registered in the Faculty of Medicine are allowed the following privileges :—

In the First and second Years in Arts, they may substitute certain equivalents for parts of the Ordinary Course. (See pp. 48, 49.)

In the Third Year in Arts, they may, if following the full course of the First Year in Medicine, take Physiology and Histology with practical work therein, or Anatomy and Practical Anatomy, as two of the courses under the heading of Science in the Ordinary Course.

Medical Students who have completed the Third Year in Arts and First Year in Medicine are required in the Fourth Year in Arts to take two only of the subjects of the Ordinary Course (or one subject with the Additional Course therein). These subjects must be either in Languages or Literature. Medical Students are recommended to continue in the Third and Fourth Years of the Arts Course subjects they have taken in the First and Second Years.

To secure these privileges, certificates of registration in the Medical Faculty must be presented at the beginning of each year to the Dean of the Faculty of Arts; and at the end of each session in the first two years, certificates of attendance on lectures and of passing the corresponding examinations must also be presented. At the end of the Third and Fourth Years, certificates must be presented to show that the full curriculum of the Medical Faculty for the year has been completed.

Applied Science.

Students in the Faculty of Applied Science, who have passed the first two years in Arts, are allowed, while pursuing the course in Applied Science, to substitute certain courses in Applied Science for the corresponding courses in Arts, and to distribute the work of the Third and Fourth Years in Arts over three years, so that they may be enabled to take the B.A. Degree at the end of the Fifth Year from entrance. For the details, application may be made to the Dean of the Faculty of Arts. Certificates of attendance, etc., in Applied Science will be required.

The above arrangements will enable candidates for the M.D. or B.A. Sc. degrees to pursue the course in Arts also, leading to the B.A. degree, and complete both courses in six years.

Literate in Arts.—A certificate of "LITERATE IN ARTS" will be given along with the professional degree in Medicine or Applied Science, to those who have completed two years study in the Faculty of Arts, and have passed the prescribed examinations.

Students of the University attending affiliated Theological Colleges.

Theological Colleges.

1 These students are subject to the regulations of the Faculty of arts in the same manner as other students.

2. The Faculty will make formal reports to the governing body of the Theological College which any such students may attend, as to :—(1) their conduct and attendance on the classes of the Faculty ; and (2) their standing in the several examinations ; such reports to be furnished after the Examinations, if called for.

3. Undergraduates are allowed no exemptions in the course for the Degree of B.A. until they have passed the Intermediate Examination ; but they may take Hebrew in the First or Second Years, instead of French or German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

*Any student who, under any of the above rules, desires to take Experimental Physics is required to take Mechanics and Hydrostatics also, in the Third Year.

7. Medals, Prizes, Classing and Certificates.

1. Gold Medals will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty on the report of the Examiners :—

The Henry Chapman Gold Medal for Classical Languages and Literature.

The Prince of Wales Gold Medal for Mental and Moral Philosophy.

The Anne Molson Gold Medal for Mathematics and Natural Philosophy.

The Shakspere Gold Medal for the English Language, Literature and European History.

The Logan Gold Medal for Geology, Mineralogy and Palaeontology.

The Major Hiram Mills Gold Medal, for a subject to be chosen by the Faculty from year to year.

If there be no candidate for any Medal, or if none of the candidates fulfil the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subject for which the Medal was intended. For details, see announcements of the several subjects below.

2. **Special Certificates** will be given to those Candidates for B.A. who have been placed in the First Class at the ordinary B.A. Examination ; have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year ; are in the First Class in not less than half the subjects, and have no Third Class. At this examination, no Candidate who has taken exemptions (see p. 60), can be placed in the First Class unless he has obtained First Class in four of the departments in which he has been examined, and has no Third Class.

3. **Certificates** of High General Standing will be granted

to those Undergraduates of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, are in the First Class in not less than half the subjects, and have not more than one Third Class. In the Third Year the conditions are the same as for the Special Certificate for B.A.

4. **Prizes or Certificates** will be given to those Undergraduates who have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

5. His Excellency the Earl of Aberdeen has been pleased to offer a **Gold Medal** for the study of Modern Languages and Literature, with European History, or for First Rank General Standing, as may be announced.

(a) The Regulations for the former are as follows :—

(1) The subjects for competition shall be French and German, together with a portion of the History prescribed for the Honour Course for the Shakspere Medal. Information concerning the History may be obtained from the Professor of History.

(2) The Course of Study shall extend over two years, viz., the Third and Fourth Years.

(3) The successful Candidate must be capable of speaking and writing both languages correctly.

(4) There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

(5) The general conditions of competition and the privileges as regards exemptions shall be the same as for the other Gold Medals in the Faculty of Arts.

(6) Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

(7) Candidates desiring to enter the Third Year of the Course, who have not obtained first-class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the Course in Modern Languages, if called on to do so by the Professors.

(8) The subjects of Examination shall be those of the Honour Course in Modern Languages.

(b) The Regulations for the Gold Medal, if awarded for First Rank General Standing, are as follows :—

(1) The successful Candidate must take no exemptions or substitutions of any kind, whether Professional or Honour, in the Ordinary B.A. Examinations.

(2) He shall be examined in the following subjects :—

(*a*) CLASSICS (both languages) ; (*b*) MECHANICS, HYDROSTATICS OPTICS, ASTRONOMY ; (*c*) MORAL PHILOSOPHY ; and any *two* of the following subjects, or any *one* of them with its Additional Course ; (*d*) GEOLOGY, etc. ; (*e*) EXPERIMENTAL PHYSICS ; (*f*) ENGLISH ; (*g*) GERMAN.

(3) His answering must satisfy special conditions laid down by the Faculty.

(4) The same Candidate cannot obtain the Gold Medal for First Rank General Standing and also a Gold Medal for First Rank Honours.

6. The **Neil Stewart Prize** of $18 is open to all Undergraduates and Graduates of this University, and also to Graduates of any other University, who are students of Theology in some College affiliated to this University. The rules which govern the award of this prize are as follows :—

(1) The Candidate must pass, in the First Class, a thorough examination upon the following subjects : Hebrew Grammar ; reading and translation at sight from the Pentateuch, and from such poetic portions of the Scriptures as may be determined.

(2) In case competitors should fail to attain the above standard, the prize will be withheld, and a prize of $36 will be offered in the following year for the same.

(Course for the present year : Hebrew Grammar (Gesenius) ; Translation and analysis of Exodus ; Isaiah XL. to the end of the book.)

(3) There will be two Examinations of three hours each—one in Grammar and the other in Translation and Analysis.

This Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill.

7. **Early English Text Society's Prize**.—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be :—

(1) The Lectures of the Third and Fourth Years on Anglo-Saxon.

(2) Specimens of Early English, Clarendon Press Series, ed. Morris and Skeat, Part II., A. D. 1298—A.D. 1393. The Lay of Havelok the Dane (Early English Text Society, ed. Skeat).

8. **New Shakspere Society's Prize.**—This Prize, the annual gift of the New Shakspere Society, open to Graduates and Undergraduates, will be awarded for a critical knowledge of the following plays of Shakspere :—

Hamlet ; Macbeth ; Othello ; King Lear.

9. **Charles G. Coster Memorial Prize.**—This Prize, intended as a tribute to the memory of the late Rev. Chas. G. Coster, M.A., Ph.D., Principal of the Grammar School, St. John, N.B., is offered by Colin H. Livingstone, B.A., to Undergraduates (men or women) from the Maritime Provinces, Nova Scotia, New Brunswick and Prince Edward Island. In April, 1898, it will be awarded to that Undergraduate of the First, Second or Third Year, from the above Provinces, who, in the opinion of the Faculty, has passed the most satisfactory Sessional Examinations, under certain conditions laid down by the donor.

10. **Vancouver Society's Prize.**—The Vancouver (B.C.) Society, of McGill Graduates, offers $50 yearly, to be distributed in prizes among the five Faculties of the University.

11. **Science Scholarships Granted by Her Majesty's Commission for the Exhibition of 1851.**—These scholarships of the value of £150 a year are tenable for two or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of Science (such as Physics, Mechanics and Chemistry) the extension of which is specially important for our national industries." Their object is not to facilitate ordinary collegiate studies, but "to enable students to continue the prosecution of science with the view of aiding in its advance or in its application to the industries of the country."

Three nominations to these scholarships have already been placed by the Commissioners in 1891 and 1893 at the disposal of McGill University, and have been awarded.

When nominations are offered, they are open to Students of not less than three years standing in the Faculty of Arts or of Applied Science, and are tenable at any University or at any other Institution approved by the Commission.

12. The names of those who have taken Honours, Certificates or Prizes will be published in order of merit, with mention, in the case of Students of the First and Second Years, of the schools in which their preliminary education has been received.

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8. Partial Students.

As will be seen from the announcement in Part First, pp. 4-30, the courses of lectures to which Partial Students are admitted are such as are likely to prove attractive to those who have limited time at their disposal, and wish to enjoy the advantages of that higher instruction which the University offers to all qualified persons.

For conditions of Entrance see p. 46.

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9. Attendance and Conduct.

All students shall be subject to the following regulations :—

1. A Class-book shall be kept by each Professor or Lecturer, in which the presence or absence of Students shall be carefully noted ; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll at the beginning of the lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention, neglect of study, or disorderly conduct in the class-room. In the case last mentioned, the student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any of the above offences against discipline shall, after

admonition by the Professor, be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify from the keeping of a session shall in each case be determined by the Faculty.

4. While in College, on going to or from it, Students are expected to conduct themselves in the same orderly manner as in the class-rooms. Any Professor observing improper conduct in the College buildings or grounds may admonish the student, and, if necessary, report him to the Dean. Without as well as within the walls of the College, every student is required to maintain a good moral character.

5 When students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

6. Any student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar.

7. Any student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

8. All cases of discipline involving the interests of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

(N.B.—All students are required to appear in Academic dress while in or about the College buildings.

At a meeting of the Corporation in April, 1895, it was agreed to request all members of the University to appear in Academic dress at University receptions, Conversaziones, etc.

Students are requested to take notice that petitions to the Faculty on any subject cannot, in general, be taken into consideration, except at the regular meetings appointed in the Calendar.)

III. FEES.

All fees and fines are payable to the Bursar of the College.

1. Undergraduates.—$37 per session.

Every candidate for the September Matriculation Examination in any Faculty, must pay a fee of $5 *before admission to the examination.* This will be reckoned as part of the regular fees if he pass, but will not be returned in case of failure.

Matriculation fee for entrance into the Second Year, $10. (Exigible from those who have failed in the First Year, and re-enter in the Second Year on examination.)

2. Partial Students.—$8 per session for one course of lectures, including the use of the Library ; $4 per session for each additional course.

Partial Students are also required to pay $2 yearly for "Athletics and the care of the College grounds," unless they state in writing to the Dean their intention not to use the grounds.

Partial Students taking the full curriculum in any one year pay the same fees as Undergraduates in that year.

N.B.—Every student is required to deposit with the Secretary of the University the sum of $3 as caution money for damage done to furniture or apparatus, etc.

Special Fees.

LABORATORY AND PRACTICAL CLASSES, VIZ., CHEMISTRY, BOTANY, PHYSICS, each per session (optional)	$10 00

No student will be admitted to any Laboratory and Practical Class except on presentation of his ticket to the Professor.

(A change in the fees for Chemistry and Physics is under consideration.)

ELOCUTION (optional)	3 00
PETROGRAPHY (optional)	5 00
GYMNASIUM (for partial students), optional	2 50
SUPPLEMENTAL EXAMINATION, at the regular date fixed by the Faculty	2 00
SUPPLEMENTAL EXAMINATION, when granted at any other time than the regular date fixed by the Faculty	5 00
FEE FOR A CERTIFICATE OF STANDING, if granted to a student on application	1 00
FEE FOR A CERTIFICATE OF STANDING, if accompanied by a statement of classification in the several subjects of examination	2 00
EXAMINATION FEE for candidate intending to enter the Medical Faculty	5 00

All applications for certificates must be addressed to the College Secretary, accompanied by the required fee.

No certificates are given for attendance on lectures unless the corresponding examinations have been passed.

Special fees are additional to the regular fees paid by Undergraduates or Partial Students, but are payable only for the optional classes or objects named above.

N.B.—The lectures in one subject in any one of the four college years constitute a "Course."

All fees for Supplemental Examinations must be paid in the Secretary's office, and the tickets shown to the Dean before the Examination.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty, and on payment of a fine of $2.

(All fines are applied to the purchase of books for the Library.)

Graduates in Arts are allowed to attend, without payment of fees, all lectures, except those noted as requiring a special fee.

Fee for the Degree of M.A.	$10 00*
" " " LL.D.	50 00*

*A Bachelor of Arts or a Master of Arts intending to proceed to a higher Degree is required, *in addition* to the above, to keep his name on the books of the University, by the annual payment of a fee of $2 to the Registrar of the University. He may, if he prefer it, compound for the above annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the date of application for the Degree.

If the degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is $25.

The M.A. or LL.D. fee must be sent with the thesis to the Secretary of the University. This is a condition essential to the reception of the application. The Secretary will then forward the thesis to the Dean of the Faculty.

Extract from the Regulations of the Board of Governors for Election of Fellows under Chap. V. of the Statutes of the University.

"From and after the graduation of 1888, all new Graduates "shall pay a Registration Fee of $2.50 at the time of their "graduation, in addition to the Graduation Fee; and shall "be entered in the University list as privileged to vote, and "shall have voting-papers mailed to them by the Secretary."

IV. SCHOLARSHIPS AND EXHIBITIONS.

General Regulations.

1. A Scholarship is tenable for *two* years ; an Exhibition for *one* year.

Scholarships.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three sessions have elapsed since their Matriculation ; and also to Candidates who have obtained what the Faculty may deem equivalent standing in some other University, provided that application be made before the end of the Session preceding the examination.

3. Scholarships are divided into two classes :—(1) **Science Scholarships :** (2) **Classical and Modern Language Scholarships.** The subjects of examination for each are as follows :—

Science Scholarships.—MATHEMATICS—Differential and Integral Calculus ; Analytic Geometry ; Plane and Spherical Trigonometry ; Higher Algebra and Theory of Equations ; NATURAL SCIENCE—Botany ; Chemistry ; Logic. (For subdivision, see below.)

Classical and Modern Language Scholarships.—Greek ; Latin ; English Composition ; English Language and Literature ; French or German.

Exhibitions.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two sessions have elapsed since their Matriculation ; and also to candidates for entrance into the Second Year.

The subjects of examination are as follows :—

First Year Exhibitions. — CLASSICS, MATHEMATICS, ENGLISH, FRENCH.

Second Year Exhibitions.— CLASSICS, MATHEMATICS, ENGLISH LANGUAGE AND LITERATURE, CHEMISTRY AND FRENCH OR GERMAN.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time.

7. Exhibitions and Scholarships will not necessarily be awarded to the candidates who have obtained the highest marks. An adequate standard of merit will be required.

8. If in any College Year there be not a sufficient number of candidates showing adequate merit, any one or more of the Exhibitions or Scholarships offered for competition may be given to more deserving candidates in another year.

9. A successful candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present seventeen Scholarships and Exhibitions :—

The Jane Redpath Exhibition, founded by Mrs. Redpath, of Terrace Bank, Montreal :—value, about $90 yearly, open to both men and women.

Ten McDonald Scholarships and Exhibitions, founded by W. C. McDonald, Esq., Montreal :—value, $125 each, yearly.

The Charles Alexander Scholarship, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects :—value, $120 yearly.

The George Hague Exhibition, given by George Hague, Esq., Montreal, for the encouragement of the study of Classics :—value, $125 yearly.

The Major H. Mills Scholarship, founded by bequest of the late Major Hiram Mills :—value, $100 yearly.

The Barbara Scott Sholarship, founded by the late Miss Barbara Scott, Montreal, for the encouragement of the study of the Classical languages and literature :—value, $100 to $120 yearly.

Two Donalda Exhibitions, open to women in the Donalda Department :—value, $100 and $120 yearly.

Ottawa Valley Graduates Society Exhibition.

The Sir J. William Dawson Exhibition. (See Appendix.)

Exhibitions and Scholarships Offered for Competition at the Opening of the Session, Sept., 1897.

N.B.—Four of the Exhibitions are open to women (two of these to women alone, either in the First or Second Year).

To Students entering the First Year, two Exhibitions of $125, one of $120, one of $100, one of $90, and one of $60.

These Exhibitions are awarded in accordance with the results of the Higher Entrance Examination for the First Year, provided an adequate standard of merit has been reached.

For subjects of Examination see under p. 44.

To Students entering the Second Year, three Exhibitions of $125, and one of $100. (See also N.B. above).

Subjects of Examination.

Greek.—Xenophon, Easy Selections (Philpotts & Jerram); Demosthenes, Olynthiacs, I. and II.; Euripides, Alcestis.

Latin.—Virgil, Georgics, Bk. I.; Horace, Odes, Bk. I.; Livy, Bk. I.

Greek and Latin Prose Composition, and Translation at sight.

A Paper on Grammar and History.

Text Books.—Myers' Ancient History; Abbott's Arnold's Greek Prose Composition, or Sidgwick's First Greek Writer; Ramsay's Latin Prose.

Mathematics.—Euclid (six books); Algebra (Hall and Knight's Advanced); McDowell's Exercises in Modern Geometry; Theory of Equations (in part); Trigonometry (first four chapters, Galbraith and Haughton).

English and Modern History.—In September, 1897, and until further notice, an examination will be held on the following works: *Language.*—Trench Study of Words. *Literature.*—Spencer, Faerie Queene, Bk. I., ed. Percival (Macmillan); Tennyson, Selections from Tennyson, ed. Rowe and Webb (Macmillan). *History.*—Church, The beginning of the Middle Ages (Epochs of Modern History, Longman's). *English Composition.*—The candidate will be required to write an essay on some subject connected with the literature or history prescribed.

Chemistry. — ROSCOE, Lessons in Elementary Chemistry, as far as page 264. (*Chemistry will not be required in September*, 1897)

French,—French Grammar including Syntax.—PAUL BOURGET, Un Saint; F. COPPÉE, La Grève des Forgerons; V. HUGO, Le Roi s'amuse, Oral Examinations.

Or, instead of French :—

German.—German Grammar (VANDERSMISSEN, Accidence and Syntax) and Composition; GRIMM, Kinder und Hausmaerchen (Vandersmissen's edition) SCHILLER, Der Neffe als Onkel, Der Gang nach dem Eisenhammer; GOETHE, Hermann und Dorothea; Translation from English into German.

No Candidate who has been placed in the Third Class in more than one subject can be awarded a Second Year Exhibition.

To Students entering the Third Year, five Scholarships of $125 tenable for two years.

One of these is offered in **Mathematics and Logic**, and one in **Natural Science and Logic** as follows :—

1. **Mathematics.**—Differential Calculus (WILLIAMSON, Chaps. 1, 2, 3, 4, 7, 9; Chap. 12, Arts. 168-183 inclusive; Chap. 17, Arts. 225-242 inclusive). Integral Calculus (WILLIAMSON, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126-140 inclusive; Chap. 8, Arts. 150-156 inclusive; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (SALMON, Conic Sections, subjects of Chaps. 1-13 (omitting Chap. 8), with part of Chap. 14). Lock, Higher Trigonometry; MCLELLAND and PRESTON, Spherical Trigonometry, Part I. SALMON, Modern Higher Algebra (first four chapters). TODHUNTER or BURNSIDE and PANTON, Theory of Equations (selected course).

   Logic as in JEVONS' Elementary Lessons in Logic.

2. **Natural Science.**—BOTANY as in GRAY'S Structural and Systematic Botany. Canadian Botany, including a practical acquaintance with the Spermaphytes, Pteridophytes and Bryopyhytes. CHEMISTRY as in ROSCOE'S Lessons in Elementary Chemistry, LOGIC, as in JEVON'S Elementary Lessons in Logic.

Two Scholarships are offered in **Classics and Modern Languages**, as follows :—

Subjects of Examination.

Greek.—PLATO, Apology and Crito ; XENOPHON, Memorabilia, Book I. ; THUCYDIDES, Book VI.

Latin.—HORACE, Epistles, Book I. ; LIVY, Books XXI., XXII. ; VIRGIL, Georgics, Book II. ; SALLUST, Catiline ; CICERO, Select Letters (Fritchard and Bernard, Clarendon Press Series).

Greek and Latin Prose Composition, and Translation at Sight.

Ancient History.—*Text-Books.*— SMITH, Student's Greece ; MOMMSEN, Rome (abridged).

English and History. — *Literature.* — SHAKSPERE Tempest, ed. Deighton, Macmillan ; MILTON, Paradise Lost, Bks. I. and II (Macmillan) ; LAMB, Essays of Elia, ed. Hallward and Hill (Macmillan). *History.*—MYERS, Mediaeval and Modern History (Ginn), Part. I. *English Composition.*—The candidate will be required to write an essay on some subject connected with the literature or history prescribed.

English Composition.—High marks will be given for this subject.

French.—RACINE, Britannicus ; MOLIÈRE, Les Femmes Savantes. French Grammar. BONNEFON, Les Ecrivains célèbres de la France. Oral examination ; Dictation.

For September 1898. RACINE, Britannieus ; MOLIERÈ, Le Misanthrope ; A. DE MUSSET, Les Nuits ; A. DE VIGNY, Cinq Mars. Grammar. LANSON, Literature Francaise. Oral Examination.

Or, instead of French :—

German. — SCHILLER—Egmont's Leben und Tod (Buchheim), die Kraniche des Ibycus, Das Lied von der Glocke, der Kampf mit dem Drachen ; IMMERMANN, Der Oberhof (Wagner, Pit Press) ; GOETHE, Iphigenie ; German Grammar and Composition ; Translation from English into German ; Dictation.

V. GENERAL INFORMATION FOR STUDENTS.

Boarding Houses.

Board and rooms can be obtained at a cost of from $15 to $25 per month : Rooms only, from $4 to $10 per month ; Board only, from $12 to $18 per month.

Students can obtain a list of Boarding Houses on application to the Secretary.

For notice of McGill Students' Club, see "University Societies."

APPENDIX.

Announcement for 1898-99.

In the Session 1898-99, certain changes in the Regulations will come into force, which will be found below :—

First Year Entrance.

Except in special cases, no Candidate will be admitted to the First Year Entrance Examination, unless he is at least sixteen years of age, and produces a certificate to this effect, if deemed necessary.

No Candidate can become an Undergraduate of the First Year except by passing the June or September Entrance Examination of the First Year.

The subjects of the Entrance Examination will be :—

1. **English.** (including History)
2. **Latin or Greek.**
3. **Geometry, Arithmetic, Algebra.**
4. **Greek or Latin** (if not already taken).
   or two **Modern Languages,** *or* one **Modern Language** with the **additional Mathematics** of the First Year Exhibition Examination.
5. **Elementary Natural or Physical Science,** viz :
   one of the following : (*a*) Physiography ; (*b*) Botany ; (*c*) Chemistry, *or* in place of (*a*) or (*b*) or (*c*) a Language not previously taken.

The examination in the above subjects will follow generally the lines laid down on pp. 42-45 of this announcement ; where the subjects are different from those there specified, detailed information will be furnished by circular at the beginning of the next session. The Botany will be the same as that required at the A. A. Examination. The amount required in Chemistry will be as follows :—

Chemistry.—Elementary inorganic Chemistry, comprising the preparation and properties of the chief non-metallic elements and their more important compounds, the laws of chemical action, com-

bining weights, etc. (The ground is simply and effectively covered by Remsen's "Elements of Chemistry," pp. 1-160).

The additional requirements in the Mathematical subjects for Exhibitions are as follows :—

Euclid :—Bks. 4 and 6, with Defs. of Bk. V. and easy deductions.

Algebra :—The three Progressions : Ratio, Proportion and Variation ; Permutations and Combinations ; Scales o Notation ; Logarithms ; Interest and Annuities.

Trigonometry :—To the beginning of the solution of oblique-angled triangles, as in Galbraith & Haughton, with deductions.

Second Year.

There will be no specified examination as heretofore for immediate admission to the Second Year, as an Undergraduate ; but in certain cases, to be dealt with by a standing Committee appointed for the purpose, the Faculty may admit to the Second Year students who shall be deemed by the Committee to be qualified.

Except in special cases, no one will be admitted to the Second Year unless he is at least seventeen years of age, and produces a certificate to this effect if deemed necessary.

Partial Students.

No one will be admitted as a Partial Student unless he is at least sixteen years of age and produces a certificate to this effect if deemed necessary.

New Exhibition.

The New York Graduates' Society of McGill University offers for competition to candidates for Entrance (men or women) an Exhibition of $60.

Special Course for Women

IN THE FACULTY OF ARTS.

Donalda Endowment.

Professors and Lecturers (as on page 3). Lady Superintendent, Miss Helen Gairdner.

The classes for women under this endowment are wholly separate, except those for Candidates for Honours (including most of the additional courses in the Third and Fourth Years). The examinations are identical with those for men. Women will have the same privileges with reference to Classing, Honours, Prizes and Medals as men.

Regulations for Examinations, Exemptions, Boarding-Houses, Attendance, Conduct, Library and Museum are the same as for men. Undergraduates wear the Academic Dress; others do not.

In September, 1897, a Scholarship, value $125 yearly (tenable for two years), will be offered for competition in Mathematics to Students of the Third Year. The course is the same as for the Mathematical Scholarship open to men.

The **Jane Redpath Exhibition** is open for competition, at the beginning of the First or Second Year, to both men and women, also the **Sir J. William Dawson Exhibition** offered by the New York Graduates' Society. (See appendix.)

Two other Exhibitions (one of the value of $120, the other $100) are open for competition in the First or Second Year to Students of the Donalda Department only. For Subjects see pp. 44 and 72. Candidates for these Exhibitions are allowed, according to the general rule of the Donalda Department, to substitute an additional modern language for Greek in the examination. In this case while the regulation concerning one modern language will, for Entrance only, be as on pp. 43 and 46, the course in that which is to be substituted for Greek in the Exhibition Examination will be :—

For First Year :—

French.—See page 45.

or **German.**—German Grammar and Composition ; THEODOR STORM, Immensee and VON HILLERN, Höher als die Kirche (both published by Heath & Co.). SCHILLER, Der Gang nach dem Eisenhammer, Das Lied von der Glocke ; STIFTER Haidedorf (Heath & Co.) ; GOETHE, Götz von Berlichingen. Translation at Sight. Translation from English into German.

For Second Year :—

French.—See page 73.

or **German.**—SCHILLER, Der Neffe als Onkel, Egmont's Leben und Tod, Der Geisterseher, Die Kraniche des Ibykus ; GOETHE, Torquato Tasso. Translation at Sight ; German Grammar and Composition ; Translation of French and English into German.

The income of the **Hannah Willard Lyman Memorial, Fund** will be given in prizes.

I. MATRICULATION AND ADMISSION.

Greek.—See p. 42.

Candidates who cannot pass in Greek may substitute an additional modern language, subject to the same regulations throughout the course of four years. There will be an entrance examination in German for such candidates.

Latin.—See p. 42.

Mathematics.—See p. 42.

English.—See p. 42.

French.—See p. 43.

German.—For 1897, the whole of JOYNES's German Reader (or equivalent amount), the whole of VANDERSMISSEN's German Grammar, Accidence and Syntax (or equivalent) including

English German exercises. The amount of grammar contained in SONNENSCHEIN's German Grammar (Parallel Grammar Series) would be regarded as an equivalent, if supplemented by exercises in translation into German.

Partial Students.—Candidates unable to pass in all the above subjects may be admitted as Partial Students to the separate classes; they may in the First Year under certain conditions make good their standing as Undergraduates at the Christmas or Sessional Examinations.

For changes in the regulations for Entrance in 1898, see appendix, pp. 75-76.

II. ORDINARY COURSE OF STUDY FOR THE DEGREE OF B.A.

(In separate Classes.)

For all Subjects (except German) **in all the Years,** see pp. 48-50

The CHEMISTRY of the First Year will be optional in 1897-98.

The first and second-year courses in **German** are as follows :—

1. THOMAS, German Grammar; FREYTAG, Die Journalisten; UHLAND, Ballads and Romances (Macmillan's Foreign School Classics). SCHILLER, Maria Stuart.
   Two hours a week.

2. THOMAS' German Grammar; LESSING, Minna von Barnhelm; GOETHE, Hermann and Dorothea; BAUMBACH, Der Schwiegersohn (Heath & Co.).
   Two hours a week.

Physical Education.

A class will be conducted by Miss Barnjum, which will be optional and open to Partial Students.

Elocution.

Instruction in this subject will be given to those who desire it, by Mr. J. P. Stephen.

Honour Courses and Additional Courses.

(In Mixed Classes.)

Undergraduates desiring to take one of the Honour Courses in CLASSICS, MATHEMATICS, MATHEMATICAL PHYSICS, MENTAL AND MORAL PHILOSOPHY, ENGLISH LANGUAGE AND LITERATURE, HISTORY, GEOLOGY AND OTHER NATURAL SCIENCES, MODERN LANGUAGES or such portions of the Honour Courses as constitute the Additional Courses, may in the Third and Fourth Years obtain exemptions to the same extent as men, and must take the lectures with men.

Details will be found on pp. 52-54.

III. DEGREES.

Students are admissible to the degrees of B.A., M.A., and LL.D., conferred in the usual way, on the usual conditions ; and will be entitled to all the privileges of these degrees, except that of being elected as Fellows.

IV. FEES.

The fees which are the same as for men (see p. 68), are to be paid to the Registrar of the University, from whom tickets for the Library and copies of the Library Rules may be obtained.

V. LODGINGS, &c.

Women not resident in Montreal, proposing to attend classes, and desiring to have information as to suitable lodgings, are requested to intimate their wishes in this respect to the Registrar of the University, at least two weeks before the opening of the session. Students desiring information as to the above or other matters are referred to the Lady Superintendent, who will be found in her office in the rooms of the Donalda Department, every day during the session, except Saturday.

Lectures Open to Partial Students, Session 1897-98.

Botany :—*Prof. Penhallow.*
Zoology :—
Geology :—*Dr. Adams.*
Experimental Physics :—*Prof. Cox and Prof. Callendar.*
Psychology and Logic :—*Rev. Dr. Murray and Mr. Lafleur.*

Mental Philosophy:—*Rev. Dr. Murray and Mr. Lafleur.*
Moral Philosophy:—*Rev. Dr. Murray.*
Rhetoric:—*Mr. Lafleur.*
English:—*Prof. Moyse.*
History:—*Dr. Colby.*

***Latin and Greek**:—
***French**:—
***German**:—
***Mathematics**:—
***Mathematical Physics**—

Those Courses in which two lectures weekly are delivered will each amount to about 45 lectures, and the others in proportion.

* The lectures on these subjects extend over all the Years of the Course, and the hours will depend on the standing of Students with respect to previous preparation as ascertained by examination.

FACULTY OF ARTS, 1897-8.

LECTURES IN THE DONALDA SPECIAL COURSE FOR WOMEN

YEARS	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
FIRST YEAR.	9	Mathematics.			Greek.	Greek.
	10	French.		Greek.	† Mathematics.	
	11	German.	English.	Latin.	English.	Mathematics.
	12	Latin.	†Mathematics.	Mathematics.		Latin.
	2		French.		French. Pract. Chem.	
	3				German.	
	4					

TIME TABLE.—*Continued.*

YEARS	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
SECOND YEAR.	9		Greek.	Latin.	French.	
	10	Mathematics.	†Mathematics.	French.	Greek.	Latin.
	11	Botany.	Math. Phys.	Greek.	† Mathematics.	German.
	12	Logic.	Latin.	Botany.		†Mathematics.
	2			Logic.		Logic.
	3	German.		Mod. History.	French.	Mod. History.
	4					
THIRD YEAR.	9	Latin.	† Mineral (*b*) German. † Math. Phys.	German. † English. † Greek.	† English. † Math. Phys.	† Mineralogy. † Math. † English.
	10	† Mental Phil. † English. † Latin.	Greek. Exp. Physics.		Latin. Exp. Physics.	French.
	11	French. † Greek.	Rhetoric.	† French.	Math. Phys.	† French. Greek.
	12	English.	Zoology. † Latin.	† Mathematics.	Zoology.	Math. Phys.
	2	† Greek. † History.	Botany.	† History.	† English. † Latin.	Botany.
	3	Metaphysics.	† French.	Metaphysics.	† History.	
	4	German.	† History.		† Mental Phil. † German.	† History.
FOURTH YEAR.	9	Moral Phil. Astronomy (*a*)	† English. German. † Mineral. (*a*)	German.	† French. Moral Phil.	†Mathematics. Geology.
	10	French. † Latin.	Exp. Physics. Greek.	Geology. † French. † English.	Exp. Physics.	French. †Math. Phys. †Eng. †Latin.
	11	† Geology. † English.	Latin.	English Lit. † Math. Phys. † Ment. Phil.	Math. Phys. † Latin.	Latin. Astronomy(*a*) † Geology.
	12	† Greek. Geology.	Moral Phil.	Mineralogy (*a*) †Greek. †Math. † Geology.	Greek.	Math. Phys. †Greek. †Eng. † Mental Phil.
	2	† History.	Botany.	† History.		Botany.
	3				† History.	
	4	† German.	† History.		German.	† History.

(*a*) During First Term. (*b*) Second Term. † For Candidates for Honours.

THE CHEMICAL LABORATORY is open every day (except Saturday) from 9 a.m. to 5 p.m.

PRACTICAL PHYSICS: Third Year, Monday, 10 a.m. to 1 p.m., or Friday, 2.30 p.m. to 5.30 p.m.; Fourth Year, Wednesday, 2.30 p.m. to 5.30 p.m.

THE BOTANICAL LABORATORIES are open daily from 9 a.m. to 5 p.m. Saturday Classes in General Morphology (2nd Year), 11 a.m. to 1 p.m.

ZOOLOGY: Demonstrations on Saturday Forenoons.

N.B.—*The hours in this table are subject to alteration during the Session.*

FACULTY OF APPLIED SCIENCE.

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Faculty of Applied Science.

WILLIAM PETERSON, M.A., LL.D., Principal (*ex officio*).
HENRY T. BOVEY, M.A., D.C.L., LL.D., M.Inst.C.E., F.R.S.C., Dean of the Faculty.

PROFESSORS.

B. J. HARRINGTON, M.A., Ph.D., F.R.S.C., Greenshields Professor of Chemistry and Mineralogy.
HENRY T. BOVEY, M.A., D.C.L., Scott Professor of Civil Engineering and Applied Mechanics.
C. H. MCLEOD, Ma.E., F.R.S.C., M.Can.Soc.C.E., Professor of Surveying and Geodesy, Lecturer in Descriptive Geometry, and Superintendent of the Observatory.
G. H. CHANDLER, M.A., Professor of Applied Mathematics.
C. A. CARUS-WILSON, M.A., A.M.Inst.C.E., M.Inst.E.E., McDonald Professor of Electrical Engineering.
JOHN COX, M.A., McDonald Professor of Physics.
J. T. NICOLSON, B.Sc., M.Can.Soc.C.E., Workman Professor of Mechanical Engineering, and Lecturer in Thermodynamics.
H. L. CALLENDAR, M.A., F.R.S., McDonald Professor of Physics.
STEWART HENBEST CAPPER, M.A., A.R.I.B.A., A.R.C.A., McDonald Professor of Architecture.
J. B. PORTER, E.M., Ph.D., M.Can.Soc.C.E., McDonald Professor of Mining.

ASSISTANT PROFESSORS AND LECTURERS.

CECIL B. SMITH, Ma.E., M.Can.Soc.C.E., Assistant Professor of Civil Engineering.
R. S. LEA, Ma.E., Asso.M.Can.Soc.C.E., Assistant Professor of Civil Engineering, and Lecturer in Mathematics.
HENRY F. ARMSTRONG, Assistant Professor of Descriptive Geometry and Freehand Drawing.

HERBERT W. UMNEY, A.M.Inst.C.E., Assistant Professor of Civil Engineering.

R. J. DURLEY, B.Sc., A.M.Inst.C.E., Assistant Professor of Mechanical Engineering.

NEVIL NORTON EVANS, M.A.Sc., Lecturer in Chemistry.

J. G. G. KERRY, Ma.E., Asso.M.Can.Soc.C.E., Lecturer in Surveying and Descriptive Geometry.

L. HERDT, B.A.Sc., E.E., Lecturer in Electrical Engineering.

DEMONSTRATORS.

H. M. TORY, M.A., in Physics.

F. H. PITCHER, M.A.Sc., in Physics.

ALEXANDER BRODIE, B.A.Sc., in Practical Chemistry.

H. T. BARNES, M.A.Sc., in Physics.

. . . . . in Mechanical Engineering.

. . . . . in Mining.

With the foregoing are associated the following PROFESSORS and LECTURERS of the Faculty of Arts :—

CHARLES E. MOYSE, B.A., Molson Professor of English Language and Literature.

D. P. PENHALLOW, B.Sc., M.A.Sc., F.R.S.C., Professor of Botany.

FRANK D. ADAMS, M.A.Sc., Ph.D., F.G.S., Logan Professor of Geology.

C. W. COLBY, B.A., Ph.D., Professor of History.

. . . . . Professor of Zoology.

§ I. GENERAL STATEMENT.

The Instruction in this Faculty is designed to afford a complete preliminary training, of a practical as well as theoretical nature, to Students who desire to pursue the profession of Architecture, or who are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

The Degrees conferred by the University upon such undergraduates of the Faculty as shall fulfill the conditions and pass the Examinations hereinafter stated will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular Department of study pursued; and, subsequently, the degree of "Master of Engineering" or "Master of Applied Science." (§ IV.)

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§ II. SUBJECTS OF INSTRUCTION.

The table on the following page shews the subjects of instruction and the hours per week devoted to each subject in the several Courses, viz. :—

I.—Architecture.

II.—Civil Engineering and Surveying.

III.—Electrical Engineering.

IV.—Mechanical Engineering.

V.—Mining Engineering.

VI.—Practical Chemistry.

	SUBJECTS:			I	II	III	IV	V	VI
FIRST YEAR.	Chemistry	§ XII.,	9	2	2	2	2	2 —	2
	Descriptive Geometry	"	4	6(a), 3(b)	6(a), 3(b)	6(a), 3(b)	6(a), 3(b)	6(a), 3(b)	6(a), 3(b)
	English	"	16	2	2	2	2	2	2
	French or German	"	17	3	3	3	3	3	3
	Mathematics	"	15	10	10	10	10	10	10
	Mechanism	"	7	1	1	1	1	1	1
	Freehand Drawing	"	5	3	3	3	3	3	3
	Chemical Laboratory	§ XIII.	2	3	3	3	3	3	3
	Mathematical Laboratory	"	9	3 (b)	3 (b)	3 (b)	3 (b)	3 (b)	3 (b)
	Shopwork	§ XV.		7	7	7	7	7	7
SECOND YEAR.	Architecture, Elements of	§ XII.,	1	1					
	Architectural History			2	2				
	Botany	"	13	—	—	—	—	—	2
	Building Construction	"	2	1	1	1	1	1	
	Chemistry	"	9	—	—	—	—	7	14
	Descriptive Geometry	"	4	3	3	3	3	3	—
	Freehand Drawing	"	5	3					
	French or German	"	17	2	2	2	2	2	2
	Kinematics of Machinery	"	7		—	1 (b)	1	—	—
	Mathematics	"	15	6	6	6	6	6	—
	Mining	"	8						
	Metallurgy	"	8						
	Physics	"	14	2	2	2	2	2	2
	Surveying	"	3	3	3	-	—	3	—
	Zoology*	"	13		3	—	—	3	—
	Drawing	"	5	10	6	3	3	3	—
	Physical Laboratory	§ XIII.	16	3	3	3	3	3	3
	Shopwork	§ XV.	3	3	3	6	6	3	—
THIRD YEAR.	Architecture & Arch. History	§ XII.,	1	3					
	Chemistry	"	9			—	—	6	16
	Decoration, Ornament, etc	"	1	1					
	Descriptive Geometry	"	4	2	2	—	—	—	—
	Determinative Mineralogy	"	11		—	—	—	3	3
	Dynamics of Machinery	"	7		—	2	2	—	—
	Electrical Engineering	"	6		—	1	—	—	—
	Freehand Drawing (Figure, etc)	"	1	3					
	Geology and Mineralogy * *	"	11	3	3	—	—	4 to 5	4 to 5
	Mathematics	"	15	3	3	3	3	3	—
	Machine Design and Exercises	"	7		—	2	5	—	—
	Metallurgy	"	8						
	Mining	"	8		—	—	—	3	—
	Modelling	"	1						
	Municipal Engineering	"	2						
	Physics	"	14		2	2	2	2	2
	Railroad Engineering	"	2		1	—	—	Opt.	—
	Surveying	"	3	3	3	—	—	3	—
	Theory of Structures	"	2	5(a) 6 (b)	5 (a)	5 (a)	5 (a)	5 (a)	—
	Zoology *	"	12		—	—	—	—	3
	Drawing and Designing	"	1		9	3	3	3	—
	Electrical Engineering Lab	§ XIII.	6	9	—	3 (b)	—	—	—
	Mathematical Laboratory	"	9	3 (c)	3 (c)	3 (c)	3 (c)	3 (c)	—
	Mining and Metallurgical Lab	XIII.	13						
	Physical Laboratory	"	16		3	{3 {6 (d,b)	3	3	3
	Testing Laboratory	§ XII.	2	7 (b)	7 (b)	4 (b)	4 (b)	4 (b)	—
	Shopwork	§ XV.			—	6	6	—	—
FOURTH YEAR.	Architecture & Arch. History	§ XII.	1	2					
	Art, History of	"	1	2	—	—	—	9	—
	Assaying	"	9						
	Chemistry	"	9		—	—	—	—	24
	Decoration, Ornament, etc	"	1	6					
	Dynamics of Machinery	"	7		—	1(a), 2(b)	1(a), 2(b)	—	—
	Electrodynamics	"	6		—	2	—	—	—
	Electrical Engineering	"	6		—	1	1(b) opt.	—	—
	Geodesy	"	3		2	—	—	—	—
	Geology and Mineralogy * *	"	11		—	—	—	3	3
	Heating and Sanitation	"	1						
	Hydraulics	"	2	2	2	2	2	2	—
	Machine Design	"	7		—	1	1	—	—
	Municipal Engineering	"	2		1	—	—	1	—
	Metallurgy	"	8		—	—	—	2	2
	Mining	"	8				—	Opt.	—
	Railroad Engineering	"	2	4	1	—			
	Theory of Structures	"	2		4	—	—	—	—
	Thermodynamics	"	10		2	2	2	2	—
	Drawing and Designing			10	8	3	9	8	—
	Electrical Engineering Lab	§ XIII.	6		—	12	—	—	—
	Geodetic Laboratory	"	7		3	—	—	—	—
	Hydraulic Laboratory	"	8		3	3	3	3	—
	Mechanical Laboratory	"	10		—	—	6	—	—
	Mining and Metallurgical Lab	§ XIII.	13						
	Museum Work	§ XIV.			—	—	—	6	—
	Physical Laboratory	§ XIII.	16		Opt.	6	Opt.	Opt.	Opt.
	Testing Laboratory	"	4	6	6	—	1	3	—
	Thermodynamic Laboratory	"	18		—	—	7	—	—
	Shopwork	§ XV.		4	3	4	4	—	—

(a) First term. (b) Second Term. (c) First half of First Term. (d) Second half of First Term.
* Beside work in the Museum. ** Also Saturday excursions, and Museum and Petrographical work.

§ III. MATRICULATION AND ADMISSION.

All Students are recommended to take the First Year and Second Year of the Arts Course. They are then admitted into the Faculty of Applied Science without examination. (See § IV. iv.)

Students and Graduates in Arts will be admitted to such standing in the Faculty of Applied Science as their previous studies will warrant, but are recommended to take the drawing and shop work during their Arts Course.

Candidates for examination must present themselves on the first day of examination, and all Students must attend punctually at 9 a.m. on Tuesday, September 21st, when the lectures will begin.

Examinations for entrance will be held in 1897 (1) on June 1st, and following days, in McGill College and at local centres, and (2) on Thursday, September 16th, and following days, in McGill College only.

Any Head Master or other person desiring a local examination in June must, before May 10th, submit the name of some suitable person, preferably a University graduate, who is willing to act as Deputy Examiner, *i.e.*, receive the questions, hold the examinations, and forward the answers to Montreal. Further particulars relating to this examination will be given on application to the Secretary of the University.

SUBJECTS OF EXAMINATION.

Mathematics—*Arithmetic*—All the ordinary rules, including square root and a knowledge of the Metric System. *Algebra*—Elementary rules, involution, evolution, fractions, indices, surds, simple and quadratic equations of one or more unknown quantities. *Geometry*—Euclid, Bks. I. II., III., IV. and VI., with definitions of Bk. V., and easy deductions. *Trigonometry*—As in Hamblin Smith, pp. 1-100, omitting Ch. XI.

English.—Writing from Dictation. *Grammar*.—A paper on English Grammar, including Analysis. The candidate will be expected to show a good knowledge of Accidence, as treated in any grammar prepared for the higher forms of schools. A similar statement applies to grammatical Analysis. West's English Grammar may be regarded as giving the minimum amount of information expected.

English History.—The candidates will be required to give the chief details of leading events, and to know the genealogy of the various royal lines. While any text-book written for the upper forms of schools may be used in preparation for the examination, Gardiner's Outline of English History (Longmans) is recommended. *Composition.*—The candidate will write a short essay on a subject given at the time of the examination. [Also, for 1898 and subsequently, *Literature.*— SHAKSPERE'S Richard II, ed. Deighton (Macmillan), and Scott's Lady of the Lake, ed. Stuart (Macmillan).]

Also, in 1898 and subsequently, any one of the following languages :

French.—Grammar up to the beginning of Syntax. An easy translation from French into English ; and from English into French ; Dictation or similar exercise. Special credit will be given for evidence of familiarity with the spoken language.

German.—The first eighty pages of JOYNES' German Reader (or equivalent amount) together with German Accidence and translation into German as in the First part of Vandermissen's German Grammar (or equivalent amount).

Greek.—XENOPHON, Anabasis, Book I. ; Greek Grammar.

Latin.—CÆSAR, Bell. Gall., Books I. and II. ; and Virgil, Aeneid, Book I. Latin Grammar.

In both Greek and Latin, Translation at sight and Prose Composition (sentences or easy narrative, based upon the prescribed prose text), will be required.

At the September, but not at the June, examination, other works in Greek or Latin equivalent to those specifiel may be accepted, if application be made to the Professors of Classics at least a fortnight before the day of examination.

Candidates who at the examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

Candidates who have passed Academy Grade II of the Province of Quebec, or the Preliminary Subjects of the Associate in Arts, will, on entrance, be exempt from examination in English Grammar, Dictation, English History and Arithmetic.

Candidates who fail in one or more subjects at the June examination, or who have taken part only of the examination and present themselves again in the following September, will be exempted from examination in those subjects only in which the Examiners may have reported them as specially qualified.

At the June examination, candidates from Ontario may present an equivalent amount from the books prescribed for the Junior Matriculation Examination of the University of Toronto.

The Matriculation or Junior Leaving Examination accepted by the Universities of Ontario is accepted by the Faculty, in so far as the subjects of their programme satisfy the Examiners of the Faculty, *i. e.*, when the subjects taken are the same as, or equivalent to, those required in McGill University.

In the case of Candidates from Ontario, Second Class non-professional certificates will be accepted *pro tanto* in the Examination.

Candidates who pass an examination at entrance in Freehand Drawing, equivalent to the First Year examination, may, on the recommendation of the examiner, be exempted from this subject in the First Year.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science may be admitted to an equivalent standing.

PARTIAL STUDENTS.—Students may be allowed to take one or more courses of instruction, upon showing, by examination or otherwise, that they are qualified to do so.

§ IV. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

1. FACULTY EXAMINATIONS.

There will be a Christmas examination for Students of the First Year in all the subjects, and for Students of the other years in such subjects as shall be determined by the Faculty. A sessional examination in all the subjects will be held at the end of the First and Second Years.

2. UNIVERSITY EXAMINATIONS.

(*a*) There will be a Primary examination at the end of the Third Year in all the subjects of that year. Candidates must pass this Examination before entering the Final Year.

(*b*) There will be a Final examination for the degree of Bachelor of Applied Science at the end of the Fourth Year, in all the subjects of that year.

Successful Students will be arranged in order of merit.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years standing, and must produce satisfactory cer-

tificates of having been engaged during that time upon *bona fide* work in either the Civil, Electrical, Mechanical, or Mining Branch of Engineering.

They must pass with credit an examination extending over the general theory and practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

Candidates must present applications for examinations, together with the necessary certificates and fees. The Faculty will notify the candidates whether their certificates are satisfactory, and also of the date of the examination. (See also § V.)

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an examination on the theory and practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading. (See also § V.)

IV. SPECIAL PROVISIONS FOR OBTAINING THE TWO DEGREES OF BACHELOR OF ARTS AND BACHELOR OF APPLIED SCIENCE IN SIX YEARS.

The Regulations heretofore in force have been modified so as to enable Students to take the two degrees of B.A. and B.A.Sc. in six years, as follows :—

1. Students who have passed the Intermediate in Arts may enter the First Year of the Applied Science Course, and will be exempted from the modern languages which they have already taken in Arts.

2. The remaining subjects required for the B.A. degree may be spread over three years instead of two.

3. The Faculty of Arts will accept the Mathematical Physics of the Applied Science Course in lieu of the Mathematical Physics of the Arts Course.

4. The Faculty of Arts will accept the Laboratory Work in Physics in lieu of the Natural Science of the Arts Course.

A certificate of Licentiate in Arts will be given along with the professional degree in Applied Science to those who, previous to entrance upon their professional studies proper, have completed two years in the Faculty of Arts, and have duly passed the prescribed examinations therein, but who do not wish to proceed to the degree of B.A.

§ V. GRADUATE COURSES

Students who take the Bachelor's degree in one of the courses provided by the Faculty of Applied Science may graduate in any of the remaining courses by attending one or more subsequent sessions.

Graduates may also take an advanced course in the branch in which they have received their degree. On passing an examination at the end of such advanced course, the Master's degree will be conferred without further examination, as soon as satisfactory certificates of having been employed for two years in practical work have been received.

Students are strongly recommended to take a Graduate Course, and special arrangements will be made for advanced and research work in the following :—

In Architecture—Advanced Study in Design. (See XIII.)

In Chemistry and Mineralogy. (See § XII., 8, 9 and 11, and § XIII., 4.)

In the determination and comparison of the errors and the co-efficients of standards of length. (See § XII., 3, and § XIII., 7.)

In the determination of gravity. (See § XIII., 7.)

The elasticity and strength of materials. (See § XII., 2, and § XIII., 17.)

The efficiency of pumps and hydraulic motors. (See § XII., 2, and § XIII., 8.)

The efficiency of power transmission by air, water, gas, steam and electricity. (See § XII., 2, 6, 7.)

The efficiency of steam, gas, oil and hot-air engines (simple and compound) and of refrigerators. (See § XII., 7 and 10.)

The efficiency of machines and machine tools, and the power absorbed by the several processes of mechanical work. (See § XII., 7.)

The efficiency of dynamometers, belting and shafting, including investigations into the relative merits of the several unguents. (See § XII., 7.)

The efficiency of the several types of boilers, including investigations on the heat-producing power of the several fuels. (See § XII., 10.)

On the efficiency of dynamos and electric motors.

The flow of water through orifices and pipes, and over weirs. (See § XII., 2, and § XIII., 8.)

In Geodesy and Practical Astronomy. (See § XIII., 7.)

In Street Railway design and theory, and in alternating apparatus.

In Physics.—The McDonald Physics Building has been equipped and arranged with special reference to Graduate Courses and original research work in various branches of pure Physics. Every facility will be afforded in the workshops for the construction of special apparatus required for such investigations. (See § XIII., 16.)

In Mathematics.—Students taking Graduate Courses will receive guidance in any advanced Mathematics required in connection with their work.

§ VI. ATTENDANCE AND CONDUCT.

1. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a session shall in each case be determined by the Faculty. The Professor may, at his discretion, refuse credit for attendance, on the ground of lateness, inattention or disorderly conduct.

2. Any student who does not report his residence on or before November 1st in each year is liable to a fine of one dollar. All subsequent changes of address must be immediately reported to the Dean.

3. Every Student is required to deposit with the Secretary of the University the sum of $5.00 as caution money for damage done to the furniture, machinery or other apparatus. In the case of improper

or disorderly conduct in the University buildings or grounds, the Faculty may impose such penalty as may be deemed advisable, and may also inflict fines, to be deducted, if the Faculty thinks fit, from the caution money.

If individual responsibility for damage cannot be traced, a *pro rata* assessment will be made over all of the Students more directly concerned.

§ VII. LIBRARY.

Librarian :—C. H. Gould, B.A.

Assistant Librarian :—H. Mott.

1. During the College Session the University Library is open daily (except on Sundays and general public holidays), from 9 a.m. till 5 p.m.; and the Reading Rooms from 9 a.m. till 6 p.m., and also from 8 till 10 p.m. On Saturdays, both Library and Reading Rooms close at 3 p.m. During vacations, both Library and Reading Rooms close at 5 p.m., and on Saturdays at 1 p.m.

2. Students in the Faculty of Applied Science, who have paid the Library fee, may borrow books on depositing the sum of $5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the session on the certificate of the Librarian that the books have been returned uninjured.

3. Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as Students ; but they are not required to pay the annual Library fee.

4. No borrower other than a Professor or Lecturer may keep any book belonging to the Library longer than two weeks, on penalty of a fine of 5cts a volume for each day of detention, but any borrower may renew the loan of a book for fitting reasons. A borrower incurring fines beyond the sum total of $1 shall be debarred from the use of the Library until they have been paid.

5. Before leaving the Library, readers must return the books they have obtained, to the attendant at the Delivery Desk.

All persons using books remain responsible for them, so long as the books are charged to them, and borrowers returning books must see that their receipt for them is properly cancelled. Damage to, or loss of books shall be made good to the satisfaction of the Librarian and of the Library Committee. Writing or making any mark upon any book belonging to the Library is unconditionally forbidden. Any persons found guilty of wilfully damaging any book in any way shall be excluded from the Library, and shall be debarred from the use thereof for such time as the Library Committee may determine.

6. Silence must be strictly observed in the Library.

§ VIII. PETER REDPATH MUSEUM.

1. The Museum will open every lawful day from 9 a.m. till 5 p.m., except when closed for any special reason by order of the Principal or Committee.

2. Students can obtain tickets of admission from the Principal on application.

3. Students are to enter by the front door only, except when going to the lectures.

4. Any students wilfully defacing or injuring specimens, or removing the same, will be excluded from access to the Museum for the session.

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§ IX. FEES.

The total fees for Undergraduates entering the First and subsequent years are $150.00 per annum, and this amount includes the fees for Tuition, Library, Matriculation, Graduation, Laboratories, Workshops, Gymnasium, Grounds, etc.

The Matriculation fee of $5.00 (included in the $150.00 fee) must be paid to the University Secretary previous to the examination.

Deposit for caution money (see § VI.), $5.00.

Each Student will be required to pay a fee of $5.00 for wear and tear of apparatus and machinery.

Partial Students will be admitted to the Professional Classes in any year on payment of the ordinary fees for that year ; or they may attend the lectures on any subject on payment of a special fee. The fee for each subject taken in the Arts Faculty is $4.00 per session. In all other subjects, the fee, unless otherwise specified, is $12.50 for each term, or $25.00 for the whole session.

Special Laboratory Fees.—Partial Students desirous of taking Courses in any of the several Laboratories will be required to pay a fee of $25.00 for each Course.

Special Workshop Fees.—Partial Students desirous of taking the workshop courses will be required to pay the following fees, which include cost of materials and use of all tools :

1 day, or 7 hours per week for the whole Session from September to April : $25 00

2 days, or 14 " " " " 45 00

3 days, or 21 " " " " 60 00

4 days, or 28 " " " " 70 00

Fee for Supplemental Examination, at date fixed by Faculty 2 00

" " if for any special reason granted at any other date than that fixed by the Faculty 5 00

Fee for a certificate of standing 2 00

Fee for Registration at time of graduation 2 50

The fees must be paid to the Secretary, and the tickets shown to the Dean, within fourteen days after the commencement of attendance in each Session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty, and on payment of a fine of $2.

The fee for a Graduate Course is $150.00. Graduates of this Faculty will be required to pay only one-half of this amount.

Fee for the Degree of MASTER OF ENGINEERING or MASTER OF APPLIED SCIENCE, $10.00.

If for any special reason the Degree of Ma.E., or M.A.Sc., be granted *in absentiâ*, the fee will be $25.00.

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§ X. MEDALS, EXHIBITIONS, PRIZES AND HONOURS.

1. THE BRITISH ASSOCIATION MEDALS AND EXHIBITION, founded by the British Association for the Advancement of Science, in commemoration of the meeting held in Montreal in the year 1884.

A BRITISH ASSOCIATION MEDAL AND PRIZE IN BOOKS is open for competition to students of the Graduating Class in each of the six Departments of the Faculty, and, if recommended by the examiners, will be awarded to the student taking the highest position in the final examinations.

2. THE GOVERNOR GENERAL'S SILVER MEDAL (the gift of His Excellency The Right Honourable the Earl of Aberdeen).

The Medal will be awarded in the Graduating Class. The conditions will be specified at the opening of the Session.

3. A PROFESSOR'S PRIZE of $20.00 in books will be awarded to the student of the Graduating class who obtains the highest standing in the subject of Hydraulics (Theoretical and Practical).

4. SUMMER WORK (See § XI., I.) The following prizes are offered for the best summer Theses :—

To the students of the Civil Engineering Course a prize of $25 presented by H. Paton, Esq.

To the students of the Electrical Engineering Course a prize of $25 presented by E. B. Greenshields, Esq., B.A.

To the students of the Mechanical Engineering Course a prize of $25 presented by W. Laurie, Esq., M.E., M.Can. Soc.C.E.

To the students of the Mining Engineering Course a prize of $25 presented by the Canadian Mining Review.

Two Prizes of $35, and $15 offered by the General Mining Association of the Province of Quebec will be open for competition to students from McGill University, Toronto University and Queen's University, and will be awarded to the two students presenting the best Summer Theses on some subject connected with mining. Preference will be given to those Theses which show decided originality.

To the students of the Architectural Course a prize of $25 presented by A. T. Taylor, Esq., F.R.I.B.A., R.C.A., President of Quebec Architects' Association.

The following Exhibitions and Prizes will be open for competition at the beginning of the Session. *Students are required to notify the Dean of their intention to compete, at least one week before the commencement of the examination.*

5. A British Association Exhibition of $50.00 and prize of $25.00 to Students entering the Fourth Year, the subjects of examination being the Mathematics and Theory of Structures of the Ordinary Course.

6. A SCOTT EXHIBITION of $60.00, founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and a prize of $25.00 presented by

H. Paton, Esq., to Students entering the Third Year, the subjects of Examination being :—

(*a*) An Essay, in the form of a character sketch, on Faraday, or Champlain, or George Stephenson. On the day of the Examination, the candidates will be required to write an essay on one of these characters, three hours being allowed for this. (*b*) Mathematics of the Second Year Course.

A. SCOTT EXHIBITION of $60.00, founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and three prizes of $40.00, $25.00 and $15.00, to Students entering the Second Year, the subjects of Examination being :—

(*a*) An Essay, in the form of a character sketch, on Tennyson, or Tyndall or Frontenac. On the day of the Examination, the candidates will be required to write an essay on one of these characters, three hours being allowed for this. (*b*) Mathematics of the First Year Course. (*c*) Descriptive Geometry of First Year Course.

7. A Prize of $10.00, presented by the McGill University Graduates' Society of British Columbia, to Students entering the Third Year, the subject of Examination being the Descriptive Geometry of the Second Year Course.

8. Two Prizes, each of $10.00, presented by J. M. McCarthy, Esq., B.A.Sc., to Students entering the Third Year, for proficiency in Levelling or Transit Work.

9. Three prizes, of $12.00, $8.00 and $5.00, presented by A. C. Hutchison, Esq., R.C.A., will be awarded to the three undergraduates taking the highest standing in the Freehand Drawing of the First Year.

10. A scholarship of the value of $100, for proficiency in Practical Chemistry, on the endowment of the late Dr. T. Sterry Hunt, to students entering the Second Year of the Chemical Course. For further conditions apply to the Dean.

11. Prizes or certificates of merit are given to such Students as take the highest place in the Sessional and Degree Examinations.

12 Honours.—On graduation, Honours will be awarded for advanced work in Professional subjects.

13. SCIENCE SCHOLARSHIPS GRANTED BY HER MAJESTY'S COMMISSION FOR THE EXHIBITION OF 1851.—The Scholar-

ships of £150 sterling a year in value are tenable for two or, in rare instances, three years. They are limited, according to the Report of the Commission, "to those branches of Science (such as Physics, Mechanics and Chemistry) the extension of which is specially important for our national industries." Their object is, not to facilitate ordinary collegiate studies, but "to enable Students to continue the prosecution of Science with the view of aiding in its advance or in its application to the industries of the country."

A nomination to one of these scholarships for the year 1897 was placed by the Commission at the disposal of McGill University, and another may be granted in 1899.

It is open to Students of not less than three years' standing in the Faculties of Arts or Applied Science, and is tenable at any University or at any other Institution approved by the Commission.

This Exhibition has been awarded as follows :—

Evans, P., 1891. Macphail, J. A., 1893. King, R. O., 1895. Gill, J. L. W., 1897.

14. The Mason prize of $50.00 in Electrical Engineering, given by Dr. A. F. Mason for original investigation in the practical application of Electricity.

[illegible] S.—A prize of $20.00, presented by C. J. Fleet, B.A., B.C.L., for bench and lathe work in the woodworking department, open to Students of not more than two terms standing in workshop practice.

§ XI. SPECIAL PROVISIONS.

1. SUMMER WORK.—During the summer vacation following the close of each year, all students entering the Third and Fourth Years are required to prepare a thesis on a subject specified by the Faculty. Any student may substitute for the specified subject, a report on some practical work in course of construction. The marks given for these theses will be added to the results of the sessional examinations. The theses must be handed in to the Dean on or before the 1st October.

2. Partial Students may be admitted to the professional classes upon payment of special fees. (§IX)

3. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4. Undergraduates in Arts of the Second and Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they have previously attended as Students in Arts.

5. Students who have failed in a subject in the Christmas or Sessional Examinations may regain their standing by passing a supplemental examination at a time appointed by the Faculty. Unless such supplemental examination is passed, Students will not be allowed to proceed to any subsequent examination in the subject. A second supplemental examination will not be granted unless under exceptional circumstances, to be investigated in each case by the Faculty.

6. Students may be required to answer satisfactorily a weekly paper on such subjects of the course as the Faculty may determine.

7. Credit will be given in the Sessional Examinations for work done during the session in certain of the subjects which will be specified at the commencement of the first term.

8. Students who fail to obtain their Session, and who in consequence repeat a Year, will not be exempted from examination in any of those subjects in which they may have previously passed, except by the express permission of the Faculty. Application for such exemption must be made at the commencement of the Session.

9. Partial Students are not eligible for prizes.

10. Certificates may be given to Students who have passed through any of the special courses attached to the curriculum.

11. The headquarters of the Canadian Society of Civil Engineers are located in Montreal. The Society holds fortnightly meetings, at which papers upon practical current engineering subjects are read and discussed. Undergraduates joining the Society as Students may take part in these meetings, and acquire knowledge of the utmost importance in relation to the practical part of the profession.

12. Caps and gowns, also the overalls for the workshops, may be obtained from the janitor of the Engineering Building.

§ XII. SPECIAL LECTURES.

In addition to the ordinary work of the Faculty, the following courses of special lectures were delivered during session 1896-97 :—

PROFESSOR NICOLSON, five lectures, on the "Transmission of Power by Compressed Air and Gas."

PROFESSOR DURLEY, three lectures, on the "Transmission of Power by Steam and Wire Ropes, and on Thermal Storage.

PROFESSOR CAPPER, twelve lectures, on "Ancient and Mediaeval Architecture."

H. IRWIN, B.Sc., M. Can. Soc. C.E., three lectures, on "The Legal Aspects of Land Surveying."

Also under the auspices of the Applied Science Graduates' Society :

J. A. L. WADDELL, Ma.E., M. Am. Soc. C.E., a series of lectures on "Bridge Designing."

L. TREADWELL. B.A. Sc., M. Am. Soc. C.E., lectures on "Bridge Work and on Foundations for Bridges and other large Structures."

L. HERDT, B.A. Sc., E.E., on "Electrical Power Transmission."

J. M. MCCARTHY, B.A.Sc., M. Am. Soc. C.E., lectures on "Bridge Sub-Structure of the Sorel Bridge."

Also under the auspices of the McGill Mining Society :

E. P. MATHEWSON, B.A.Sc., a lecture on "a Modern Silver Lead Smelting Plant."

J. F. JOHNSON, B.Sc., a lecture on "the Manufacture and Use of Explosives."

J. E. HARDMAN, B.Sc., a lecture on "Mining in British Columbia."

§ XIII. COURSES OF LECTURES.

1. ARCHITECTURE.

Professor :—S. HENBEST CAPPER, M.A.
Lecturer :—H. F. ARMSTRONG.

The professional work of the Architectural Course begins in the Second Year, for which the first, or preliminary, year is preparatory, especially in the departments of Mathematics and Drawing (Free-hand, Lettering, and Projections).

The work of the Second Year is intended to be of a general character, and is so planned as to include so far as possible Architectural work suitable for Civil Engineering Students, for whom the lectures on the History of Architecture and on Building Construction are compulsory.

The Third and Fourth Years are devoted to more specialized architectural study in various branches, and a Fifth or Graduate Year will be organized for advanced study, especially in design.

In the Second Year the Historical Course embraces a rapid resumé of Architectural History from ancient Egyptian to modern times. The great eras of European civilization are successively dealt with and the evolution of styles is traced in their constructional and ornamental forms and methods. The course embraces Ancient Egypt, Ancient Greece, Rome and Byzantium, Early Christian and Romanesque Architecture, Gothic, the Renaissance and Revived Classic.

In the Third and Fourth Years the historical lectures are arranged in continuation and extension of this general course, detailed courses being delivered upon Ecclesiastical, Domestic, and Public Architecture, with the object of preparing the Student for the problems and requirements of modern work in the light of the various solutions worked out for similar problems in the past and with the help derived from familiarity with historic evolution in architecture.

The constructive side of architecture is dealt with in the Architectural Engineering Courses.

In the Second Year a general course, common to all Architectural and Engineering Students, is given upon Building Construction and Materials, which is supplemented and continued in the Third Year, combined with practical work in the Testing Laboratories.

The Theory of Structures is dealt with in the Third and Fourth Years, as also Municipal Engineering and Sanitation and Hygiene; special courses on Heating and Ventilation, and on Electrical Installation are delivered in the Fourth Year.

Specifications, including Working Drawings and Architectural Practice, are dealt with in the Third and Fourth Years.

For the scientific requirements of the profession the courses in Mathematics are very fully developed and include Descriptive Geometry, Shades and Shadows and Perspective. Surveying is studied in the Second Year, and a course in Geology is given in the Third.

In Drawing full instruction is given during all four years; free-hand drawing (figure and ornament) from the cast and architectural draughtmanship occupying much of the students' time during the three years of the professional course. Modelling in clay is included in the Third Year (§ XIII, 14).

Problems in Architectural Design form the basis of work in the Architectural Drawing Class from the earliest practicable period

and are combined with the study of the Classical Orders and with the Elements of Architecture (doors, windows, arches and arcades, cornices, mouldings, etc.), upon which, as well as upon historical ornament, courses of lectures are given.

In the Fourth Year a course of lectures is included upon General Art History, so as to place the architectural student in touch not only with the decorative details of the different architectural styles, but also with the contemporary forms in other branches of art, especially the decorative arts employed in building.

Architectural Equipments.

The architectural equipment consists of photographs and illustrations, an arc-light electric lantern and a large collection of slides, diagrams, models, casts, and a library for architectural study. (See § XIV).

Women Students.

In accordance with a recommendation of the Faculty, the Architectural and Modelling Classes will be open to Women Students. Information as to admission may be obtained on application to the Dean of the Faculty or to the Professor of Architecture.

2. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor :—HENRY T. BOVEY, M. INST. C. E. (Scott Professor of Civil Engineering and Applied Mechanics).

Assistant Professors :—CECIL B. SMITH, MA.E.
R. S. LEA, MA.E.
HERBERT W. UMNEY, A.M.INST. C.E.

THEORY OF STRUCTURES.

The lectures on this subject embrace :—

(*a*) The analytical and graphical determination of the stresses in the several members of framed structures, both simple and complex, as, *e.g.*, cranes, roof and bridge trusses, piers, etc.

(*b*) The methods of ascertaining and representing the shearing forces and bending moments to which the members of a structure are subjected.

(*c*) A study of the strength, stiffness and resistance of materials, including a statement of the principles relating to work, inertia, energy and entropy, together with a discussion of the nature and effect of the different kinds of stress and the resistance offered by a material to deformation and to blows.

(*d*) The design and proper proportioning of beams, pillars, shafts, roofs, bridge piers and trusses, arches, arched ribs, masonry dams, foundations, earth works and retaining walls.

Graphics.—A complete course of instruction is given in the graphical analysis of arches and of bridge, roof and other trusses, and in the graphical solution of mechanical problems. It is therefore possible for the student to apply both the analytical and graphical methods of treatment, and thus to verify the accuracy of his calculations.

TEXT-BOOK.—Bovey's Theory of Structures and Strength of Materials.

The Laboratory Work (see also XIII.) is as follows :—

FOURTH YEAR.—During the Fourth Year, students are expected to engage in a research upon the physical properties of a material of construction, with special reference to the form and position of such material in the structure.

THIRD YEAR.—During the Third Year the Laboratory work will include the following :—

(*a*) *The testing of Timber.*—Transverse Tests on Hard and Soft Timber. Compressive Tests on specimens of various lengths cut out of the same timbers. Bearing Tests on specimens from same timbers. Tensile Tests on specimens from same timbers. Shearing Tests on specimens from same timbers.

(*b*) *The testing of Iron and Steel.*—Tensile Tests of Wrought Iron, Mild Steel, Cast Steel and Cast Iron. Compressive Tests of ditto. Transverse Tests of ditto.

(*c*) *The testing of Brick and Stone.*

(*d*) *The testing of Concrete and Cement.*—A complete course in the Testing of Cements according to the Standard Methods of the Canadian Society of Civil Engineers.

Graduate Course.

Special arrangements are made for advanced and research work on the nature, elasticity and strength of the several materials of construction.

Materials of Construction.

(*a*) Timber.—Growth, characteristics, diseases, enemies, preservatives, life, strength, tests, etc.

(*b*) Iron and Steel.—Manufacture, characteristics, strength, special uses, tests, etc.

(*c*) Brick, Terra Cotta.—Manufacture, chemistry of clays, uses, strength, tests, etc.

(*d*) Stone, Slate, etc.—Characteristics, weathering qualities, strength, hardness, uses, tests, etc.

(*e*) Cement, Lime, Mortars, Concretes, etc.—Chemistry of cements, manufacture, uses, strength, tests, etc.

Elements of Building Construction.

(*a*) Foundations on Land.—Bearing power of soils, safe loads, testing, drainage, etc.

(1) Piling, bearing power, formulae and data, cost.

(2) Pedestals and footings of concrete and steel, timber grillages, etc.

(3) Methods of timbering and excavation in sinking, pumping, Poehle, air lift, etc.

(*b*) Foundations in Water or Deep Foundations.—Preparing foundations by piling, dredging, etc., coffer dams, open caissons, pneumatic caissons and piles, open dredging, Poetsch freezing process, hydraulic shields, blasting, explosives.

(*c*) Foundation Courses.—Monolithic concrete, concrete and steel, stone, timber, broken stone, drainage, equal distribution of loads to prevent unequal settlement.

(*d*) Walls and Buildings.—(1) Brick.—masonry, mortar, joints, joints, arches, centering, strength, specifications, cost.

(2) Stone.—Bonding, laying, classes of masonry, mortar, joints, methods and nomenclature of cutting, tooling, strength, specifications, cost.

(3) Concrete Artificial stone, terra cotta, enamelled brick.

(4) Timber.—Simple joints, framing for buildings and structures.

(5) Steel Columns.—Girders, flooring, rivetting, fire-proofing of walls and ceilings.

(*e*) Retaining Walls.—Abutments, arches, culverts, engine foundations of brick, stone, concrete.

Lectures to be illustrated by wall diagrams, lantern slides, models and museum specimens.

HYDRAULICS. (For Laboratory Work, see § XIII.)

The lectures deal with this subject both theoretically and with reference to its practical application.

The Student is instructed in the fundamental laws governing the equilibrium of fluids, and in the laws of flow through orifices, mouthpieces, submerged (partially or wholly) openings, over weirs, through pipes and in open channels and rivers. The impulsive action of a free jet of water upon vanes, both straight and curved, is carefully discussed, and is followed by an investigation of the power and efficiency of the several hydraulic motors, as, *e.g.*, Reaction Wheels, Pressure Engines, Vertical Water Wheels, Turbines, Pumps, etc.

TEXT-BOOK.—Bovey's Hydraulics.

The laboratory work (see also § XIII.) will include the following :—

(*a*) *Flow through orifices.*—The determination of the coefficients of discharge, velocity, etc.

(*b*) *Flow over weirs.*—The determination of the coefficient of discharge with and without side contraction. Also the measurement of the section of the stream.

(*c*) *Flow through pipes.*—The determination of the effect upon the flow, of angles, bends and sudden changes of section.

(*d*) *Impact.*—The determination of the coefficient of impact.

(*e*) *Motors, etc.*—The determination of the efficiency of Pelton and other wheels, of vortex and other turbines, of centrifugal and other pumps, etc.

HYDRAULIC MACHINERY,

The lectures in this Course are of a descriptive character, including the details of construction of Vertical and Horizontal Water Wheels, Three Cylinder Engines, Pumps, Accumulators and Presses, Workshop Tools and Appliances, Dock and Harbour Machinery, and the Transmission of Power.

Graduate Course.

Special arrangements are made for advanced and research work on the flow of water through orifices, over weirs, and on the efficiency of pumps and hydraulic motors.

N.B.—Students taking a Graduate Course will receive guidance in any advanced Mathematics required in connection with their work.

RAILROAD ENGINEERING.

The lectures on this subject will embrace :—

(*a*) *Location* —Traffic, gradients, curvature, train resistance, general location of line by comparisons of routes.

(*b*) *Construction.*—Determination of structures required in construction with descriptions of types of same. Laying out of work ; calculation of quantities of material used in construction. Specifications.

(*c*) *Permanent Way.*—Track-laying, ties (wooden and metal), ballast, steel rails and fastenings, semaphores, switches, yards, turnouts, frogs, etc., methods of signalling (telegraphic, staff, block, permissive block, etc.). Operation and equipment, with special reference to couplers and brakes; maintenance of way, renewals, surfacing, etc. Resumé of railroad law, having special reference to the duties of an Engineer.

These lectures, while giving the best practice of the present day, will only enter into detail sufficiently to illustrate the principles underlying the location, construction and maintenance of railroads.

Municipal Engineering.

The lectures on this subject will embrace :—

(*a*) *Water Supply.*—The quantity and quality of water ; systems and sources of supply ; rainfall and evaporation ; storage as related to the supplying capacity of water-sheds ; natural and artificial purification ; distribution, including the location of mains, hydrants, stop-valves, etc., combined or separate fire and domestic systems ; details of construction, including dams, reservoirs, pumps, etc., preliminary surveys, estimates of cost, statistics, etc.

(*b*) *Sewerage of Cities and Towns.*—The various systems for the removal of sewage; special methods in use for its treatment and ultimate disposal ; the proportioning and construction of main branch and intercepting sewers ; manholes, flush-tanks, catch-basins, etc. ; materials used in construction ; estimates of cost.

(*c*) *Roads, Streets, Pavements.*—Methods and costs of construction and maintenance, drainage, etc., of country roads ; earth, macadam, telford, etc., comparisons of value to community by their effect on hauling capacities of teams. Pavements and sidewalks ; objects of, foundations for, and materials employed (stone, wood, brick, asphalt, etc.) considered as to first cost, and cost and methods of renewal ; effect on health of inhabitants, relative tractive and wearing qualities, methods and cost of cleaning, etc., etc.

The lectures are designed to give the student a grasp of the principles involved rather than too great a detailed mass of facts, which vary year by year in minor points.

3. SURVEYING AND GEODESY.

Professor :—C. H. McLeod, Ma.E.
Lecturer :—J. G. G. Kerry, Ma.E.

This course is designed to give the student a theoretical and practical training in the methods of land and Geodetic Surveying, in the field work of engineering operations and in Practical Astronomy. The course is divided as follows :—

Second Year.—Chain and angular surveying ; the construction, adjustment, use and limitations of the various instruments. Underground surveying. Topography, levelling, contour surveying.

Third Year.—Construction surveying, including the location of roads, simple and transition curves, setting out work and calculation

of quantities. Geodetic, trigonometric and barometric levelling. Descriptions for deeds. General land systems of the Dominion and Provinces. Topographic and photographic surveying. Hydrographic surveying. Introduction to Practical Astronomy. Graphical determination of spherical triangles, spherical projections, construction of maps.

In the field the students of the Second and Third Years are required to carry out the following :—(1) A chain survey. (2) A chain and compass survey. (3) A pacing survey. (4) A contour survey. (5) A plane table survey. (6) A survey and location of a line of road with determination of topography and contours and subsequent staking out for construction. (7) A hydrographic survey of a channel in the St. Lawrence River. (8) A Survey at night illustrating underground methods. (See special notice, page 145).

All students are required to keep complete field notes, and from them to prepare maps, sections and estimates of the work.

The large drawing rooms are furnished with fixed mountings for the various instruments, in order to permit of their use and investigation during the winter months.

Fourth Year.—Practical Astronomy :—the determination of time, latitude, longitude and azimuth. Geodesy :—figure of the earth; measurements of base lines and triangulation systems; adjustments and reductions of observations.

The field work of the 4th year consists in the measurement of a base-line, in triangulations and precision levelling.

The practical work in Astronomy (for equipment of observatory see XIII, Art. 7) comprises : (1) Comparisons of clocks and chronometers. (2) Determination of meridian by solar attachment. (3) Meridian, latitude and time by solar and stellar observations with the Engineer's transit. (4) Latitude and time by sextant. (5) Time by astronomical transit. (6) Latitude by zenith telescope. (7) Latitude by transit in prime vertical.

Exercises in the Geodetic laboratory (for equipment see § XIII, Art. 7) carried out in this year include the folowing:—(1) Measurement of magnifying power. (2) Determination of vernier errors. (3) Errors of graduation. (4) Measurement of eccentricity of circles. (5) Determination of errors of run of theodolite microscopes. (6) Investigation of the errors of a standard bar. (7) Graduating scales with the dividing engine, and comparison thereof on the comparator. (8) Investigation of the errors of circles on the circular comparator. (9) Determination of the constants of steel tapes. (10) Investigation of the graduation errors of steel tapes on the fifty-foot comparator. (11) Investigation of the errors of aneroid barometers. (12) Investi-

gation of the errors of level tubes, and determination of their scale values. (13) Measurement of the force of gravity with a reversible pendulum. (14) Measurements of magnetic dip, declination and horizontal force.

The equipment of the surveying department comprises the following, in addition to the apparatus of the Observatory and Geodetic Laboratory :—Six transit theodolites by various makers, solar attachment and mining telescopes. Five dumpy and two wye levels. Four sextants and artificial horizons. Two plane-tables. Three surveyors' compasses. Three prismatic compasses. Three current-meters. 300 and 500 ft. steel tapes arranged for base measurement. An 8 in. altazimuth. A Kern precision level, rods, etc. Two heliotropes, several barometers, pantograph, station pointers, hand levels, steel bands, chains, tapes, pedometers, rods, and other minor instruments.

Examinations for Land Surveyors:—Any graduate in the Faculty of Applied Science in the Department of Civil Engineering and Land Surveying may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor.

Text Books :—Gillespie's Surveying, Johnson's Theory and Practice of Surveying, Shortland's Nautical Surveying, Green's Practical and Spherical Astronomy, Nautical Almanac, Baker's Engineers' Surveying Instruments.

Graduate Course.

Special arrangements are made for advanced and research work in Geodesy and Practical Astronomy. See § V.

4. DESCRIPTIVE GEOMETRY.

Lecturers :— { C. H. McLeod, Ma.E.
H. F. Armstrong.

This course deals with the methods of representing objects on one plane, so that their true dimensions may be accurately scaled. It discusses the methods employed in the graphical solution of the various problems arising in Engineering design, and deals generally with the principles underlying all constructive drawing. The methods taught are in all cases illustrated by applications to practical problems. It is the aim of the work to develop the imagination in respect to the power of mentally picturing unseen objects and, incidentally, precision in the use of the drawing instruments is attained.

First Year.—Geometrical drawing, orthographic projections, including penetrations, developments, sections, etc. Isometric projection.

SECOND YEAR.—Problems on straight line and plane. Projections of plane and solid figures. Curved surfaces and tangent planes. Intersections of curved surfaces. Axometric projections. Shades and shadows. Mathematical perspective and the perspective of shades and shadows.

5. FREEHAND DRAWING, LETTERING, ETC.

Assistant Professor :—H. F. ARMSTRONG.

In the *Freehand Course*, the object will be to train the hand and eye, so that students may readily make sketches from parts of machinery, etc., either as perspective drawings in light and shade or as preparatory dimensioned sketches from which to make scale drawings.

In the *Lettering Course*, plain block alphabets, round writing, and titles will be chiefly dealt with. In this course also, tinting, tracing, blue printing and simple map drawing will be included.

6. ELECTRICAL ENGINEERING.

Professor :—C. A. CARUS-WILSON, M.Inst.E.E. (McDonald Professor of Electrical Engineering).

Lecturer :—L. HERDT, B. A. Sc., E.E.

The object of this course is to introduce the Student to the principles underlying the practice of Electrical Engineering. But little time is devoted to the consideration of strictly technical details, which the Student can far better study in the factory, where he is strongly recommended to go after his college course. The methods and the instruments are, in almost every case, those that the Student will have eventually to use in practice. The object of the lectures is not to go over ground already covered by the text-books, but rather to direct the reading of the Students and to discuss problems arising out of the Laboratory work.

The work in the Electrical Engineering laboratories is not commenced until the Third Year. By that time the Students will have gained a fair general acquaintance with Electricity in the Physical Laboratory. They will then begin a series of experiments on Electricity and Magnetism on a practical scale, using methods and instruments in ordinary practical use, confining their attention more to the principles than to their application. This term's work is preparatory to that of the Fourth Year, when the Students will, in the Dynamo Room, study the practical application of these principles.

Here they will make experiments on electrical machinery of all kinds : series, shunt, and compound dynamos ; motors, motor-

generators, alternators, etc. They will carry out tests of dynamos, transformers and motors under practical working conditions, not only on the apparatus in the dynamo room but also throughout the building, where there are several motors driving lathes, fans, etc., besides an electric elevator and an electric drill. In addition to these advantages they will have the opportunity of seeing a typical lighting station of twelve hundred lights at work, and may become familiar with the best practice and design of engines, dynamos, switchboard, and wiring.

The following is the general plan of work in this Department :—

THIRD YEAR.—Commencing in November. (*a*) 3 hours weekly, Electrical Laboratory. Practical use of the Instruments in common employ in Electrical Engineering, such as ammeters and voltmeters. The Students will be taught how to handle currents, how to use the instruments, make connections, etc. (*b*) 1 hour lecture, 2 hours demonstration weekly, in the Magnetic Laboratory. Practical magnetic measurements. Commercial tests of iron. Magnetic principles, underlying dynamo design, illustrated by examples worked out numerically in class from data obtained by experiment.

FOURTH YEAR.—(*c*) 2 hours weekly, Electro-Dynamics, lectures. (*d*) 1 hour demonstration weekly, in the Dynamo Room, methods and principles referred to in lecture illustrated by practical experiments before the whole class. (*e*) 3 hours weekly, same experiments as in (*d*) worked out by the students in groups of four or five in the Dynamo Room. (*f*) 3 hours weekly, Problem Paper, examples bearing on the lectures of the worked out by each student independently in class. (*g*) 3 hours weekly, Graphic Solution of practical problems in the Draughting Room. (*h*) 3 hours weekly, Dynamo Design, whole class in the Draughting Room. (*j*) 1 hour weekly, lecture, Descriptive Electrical Engineering, general description of apparatus from the engineering point of view, *e.g.*, laying out of electric roads, design of power stations, etc. (*k*) 1 hour weekly during March, lecture, Advanced Electro-Dynamics. (*l*) 1 hour weekly during February, lecture, practical testing of Electrical Systems for faults and insulation. (*m*) 3 hours weekly, examining and sketching electrical apparatus in the City, lighting and power plants, elevators, etc.

The course of Lectures in Electro-Dynamics will treat of the following subjects :—

Motors.

The Induction Factor : physical meaning of; general equation for in terms of given data ; variation of due to series winding and reactions ; its influence on design.

Elementary Conditions of Displacement : direction of rotation ; general equations for speed and current ; relation between torque and induction factor ; power diagrams.

Experimental Proof of equation for torque ; corrections for friction and hysteresis ; practical methods of finding the induction factor.

Motors with Constant Induction Factor: curves of torque, speed and power ; parallel running of two or more motors ; effect of unequal induction factors ; application to testing; Kapp's method ; Hopkinson's method ; graphic solutions ; speed regulation.

Motors with Variable Induction Factor : curves of torque, speed and power ; parallel running ; graphic solutions ; effect of unequal induction factors ; effect of residual magnetisation.

Armature Reaction : theoretical considerations ; experimental results ; the reactions of the slotted armature ; influence on design ; sparking.

Acceleration: analytical and graphical solutions ; braking action.

Motor Control : different types of controllers discussed ; the series-parallel controller ; practical results, with figures showing the speed curves obtained on various electric roads ; discussion of the advantages of the different controllers under special circumstances, grades, etc.

Frictional Resistance : experimental determination of ; case of elevators with worm and spur gearing ; tests of standard street car equipments.

Alternating Currents.

Self Induction. Helmholtz's Law. Solution of general current equation. Measurements of current and electromotive force and self-induction. Inductive Drop. Calculation of losses for given circuits. Graphic solutions. Power measurements. Theory of the watt-meter. Errors of watt-meters, Theory of the Transformer, hysteresis, leakage, drop. Efficiency. Methods of testing. Transformer design.

Descriptive Electrical Engineering.

A special course of lectures in Descriptive Electrical Engineering is given by Mr. Herdt, to the Fourth Year Students.

The lectures on this subject will embrace :—

(*a*) Dynamo electric machines ; construction of dynamos ; coupling of dynamos. Alternators of different types ; construction of alternators. (*b*) Different systems for the distribution of electrical energy ; sectional area of conductors ; aerial lines and underground conduits. (*c*) Central stations ; their emplacement ; selection of machinery ; feeders and regulators ; switchboards. (*d*) Electric railways ; different systems ; overhead construction.

Graduate Course.

A special course in Electrical Engineering will be arranged for the session 1897-98. This course will be open to graduates in Mechanical Engineering, or others who can show by examination or certificate that they are sufficiently qualified.

7. MECHANICAL ENGINEERING.

Professor :—J. T. Nicolson, B.Sc.., M.Can.Soc. C.E. (Workman Professor of Mechanical Engineering).

Assistant Professor :—R. J. Durley, B.Sc., A.M.Inst. C.E.

Demonstrator :—.. .. ..

This course embraces four subjects of study, as follows :—

I. Descriptive Mechanism and Kinematics of Machinery.

A course of lectures, illustrated by the lantern, will be given in the First Year, introducing the subject of mechanism in general to the Student. Beginning with elementary contrivances and common forms, the functions and principles of all kinds of ordinary mechanisms are explained ; and the course concludes with detailed descriptions of prime movers, machine tools, locomotives, and other machinery.

In the Second Year the science of Kinematics applied to machinery is taken up. Reuleaux's principles and classifications are followed, and illustrated by the fine and unique collection of models in the Museum. The synopsis of the course includes the following subjects: Definition of a machine. Lower Pairs. Kinematic chains and trains. Centrodes. Restraint. Higher Pairs. Force and chain closure. Dead points. Notation Analysis of the quadric crank chain, the slider-crank chain, the double-slider crank chain. Chamber crank and wheel trains Kinematic synthesis.

II. Dynamics of Machinery.

While motion without regard to force was considered in the kinematic course, the action of external forces so as to compel rest or prevent change of motion, or so as to produce or to change motion in the links of mechanisms, is now considered in a series of lectures extending over two years.

The Third Year course embraces the following :—

Friction. Laws based on recent experiments, applied to journals and pivots. Railway brakes. Resistance to rolling. Friction in mechanisms treated graphically. Dynamics of belt and rope drives. Friction clutches. Elementary parts of dynamics of the steam engine.

curves of crank effort for single and multiple cranks. Fluctuation of energy and of speed. Fly-wheels. Indicators. Absorption and transmission dynamometers.

FOURTH YEAR:—Balancing of double and single acting engines and of the locomotive. Rigid dynamics applied to the connecting rod, the oscillating engine, the governor, and gyrostatic action in machinery. The inter-relation between fly-wheel and governor. Dynamics of machine tools, of pumping and of forging machines. Graphic treatment of the dynamics of complicated machines. Knocking of steam engines.

III. MACHINE DESIGN.

In the above courses the parts of the machines considered have been supposed perfectly rigid ; their real state in this respect is considered in two courses of lectures extending over the Third and Fourth Years.

In the Third Year the principles of the strengths of materials are applied to the elements of machines ; *e.g.* :—bolts and nuts, keys and cotters, rivets and riveted joints ; journals, pivots, axles, shafts and their couplings.

In the Fourth Year the first term is devoted to the more complicated parts of machines, as : bearings, pulleys, toothed wheels, pistons and their rods, connecting rods, cranks and their shafts, fly-wheels, valves, pipes and cylinders. The second term is taken up with the discussion of the theoretical principles involved in the special machine which is being designed in the drawing office. In successive years, a marine engine, a slotting machine, an overhead traveling crane, an experimental pump, an air pump and other machinery have been taken up.

IV. MECHANICAL DRAWING.

This course extends over three years :—

SECOND YEAR.—Elementary principles of mechanical drawing. Simple machine details. Sketching of machinery. Dimensioning. Tracing and conventional colouring.

THIRD YEAR.—Making of working drawings. Simple designing. Engine designing.

FOURTH YEAR.—Practical machine design. The complete design of a machine, such as a steam engine, a pump, a crane, a turbine, a machine tool, or an air pump and condenser.

Graduate Course.

A graduate course in Mechanical Engineering has now been arranged for, and will consist of part or all of the following work :

Experimental researches on steam engines and boilers, hot air and gas engines, compressed air plant for power transmission, refrigerating machines ; on superheated steam, cylinder condensation, and feed heating ; and on the value of fuels.

Experiments on the relative value and properties of lubricants, on transmission and absorption dynamometers, on the efficiency of transmission machinery, and of machine tools.

Researches on the tempering and welding of various materials ; and on the properties of alloys.

N.B.—Students taking a Graduate Course will receive guidance in any advanced Mathematics required in connection with their work.

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8. MINING AND METALLURGICAL ENGINEERING.

Professor :—John Bonsall Porter, E.M., Ph.D. (McDonald Professor of Mining and Metallurgy).

Demonstrator :—

The undergraduate work of this department extends over the latter three Years of the course, and consists of lectures, classes in designing and drawing, metallurgical and mining machinery, in the specification of appliances and establishments ; and in laboratory work in Ore-Dressing, Assaying, and Metallurgy.

I. A course of lectures is given to the Second Year students, in which both Mining and Metallurgy are treated in a general and descriptive way. These lectures are illustrated by means of lantern slides, photographs and drawings, and specimens from the department Museum, and are intended to give the student a thorough grounding in the subject, in order that he may be prepared to appreciate the mining or metallurgical establishments which he is expected to visit during his vacation, and to enter properly into the advanced and detailed work of the Third and Fourth Years.

In this Year, the student is expected to spend one afternoon per week in the drawing room, working on the mechanical drawing of machinery.

II. In the Third Year, a detailed course of lectures is given in Metallurgy, the headings being as below :—

Fuels.—The principles of combustion ; calorific power ; calorific intensity, etc. Natural fuels ; wood, peat, coal, oil, and natural gas. Artificial fuels : coke, compressed fuels, water-gas, producer-gas.

Ores.—The ores of the various metals.

Refractory Materials, etc.—Sand, clay, fire-brick, etc., etc.

Furnaces—The general types of furnaces and the characteristics of each.

IRON AND STEEL.—The blast-furnace and its accessory machinery ; pig iron, cast iron, etc. The conversion of pig iron into wrought iron and steel, by means of puddling, blister, Bessemer, open-hearth, and other methods. The rolling mill ; methods and machinery for making structural iron and steel rails, special shapes, heavy forgings, armour, etc., etc. General design and location of iron and steel plants.

COPPER.—Sampling and mixing of ores ; calcination and roasting ; mechanical calciners ; smelting in reverberatory and shaft-furnaces ; matte fusions ; Bessemerizing, refining, etc. Wet methods for copper ; electro-metallurgy ; copper rolling mill and manufacture.

LEAD.—Sampling and mixing of ores ; calcination and roasting ; mechanical roasters ; Smelting in shaft and reverberatory-furnaces ; softening and refining.

GOLD AND SILVER.—Extraction of precious metals from free milling ores ; stamp mill amalgamation, amalgamating pan and barrels, patio process, etc. Extraction from refractory ores ; roasting, chlorination, cyanide process, special methods, etc. Extraction from base metals ; desilverization of lead, Pattinson, Parkes, etc. Cupellation, parting, wet methods, electro-metallurgy, etc.

OTHER METALS.—Zinc, tin, mercury, nickel, cobalt, aluminium, etc. The elements of the Metallurgy of the less important metals are discussed briefly.

In addition to the lectures on Metallurgy, which are thoroughly illustrated, the Third Year students are required to spend a certain number of hours weekly in the drawing room, working on the designing of Metallurgical apparatus, and in the Metallurgical laboratory where actual work is carried on.

III. In the Fourth Year, a detailed course of lectures is given in Mining and Ore-Dressing, the headings being as below :—

MINING.—Prospecting and hydraulic mining ; diamond drills, etc. ; artesian wells. Excavation and quarrying ; rock drills, channelling machines, and coal cutters ; explosive materials and blasting. Shaft sinking, tunneling. Getting out material by stoping, chambering, long-wall system, etc. ; supporting excavation by timbering, masonry, etc., etc. Mine-pumping and ventilation ; underground haulage and hoisting. Mine accidents and their prevention. General arrangement of mining plant ; administration, miners' stores and dwellings. Law relative to mining claims and patents.

ORE DRESSING.—Treatment of ores underground and at the surface ; hand picking, crushing, screening and sizing ; jigs and other

concentrators ; spitzkasten, spitzlu ten, vanners, buddles ; tables, magnetic separators, etc. Ore and coal-washing machinery ; storage and delivery of ores and coal for transportation.

IV. Special courses in advanced work are offered in both Mining and Metallurgy, and these courses, owing to the unequalled equipment of the new laboratories, as detailed below, can be made exceedingly valuable both theoretically and practically.

V. *Illustrations, Museums, Societies, Etc.*—The department already owns a collection of one thousand photographs, eight hundred of which are kept in series in duplicate, and loaned to students for the session : and arrangements are being made to furnish sets of these, at cost price, to such students as wish to retain them. This collection is rapidly being enlarged.

The Museum of the new building will contain suites of ores, fuels, and metallurgical materials, models of mines and furnaces, and specimens of finished products.

The McGill University Mining Society meets fortnightly to read and discuss papers by graduate and student members, and from time to time to hear lectures given by outsiders eminent in the profession.

VI. Excursions are made by the classes, from time to time, to such metallurgical works and mining establishments as are within reach, and arrangements are being made for a short summer session in one or another of the important mining centres, this work to occupy about one month of the vacation between the Third and Fourth Years.

VII. *Laboratories* —The unequalled laboratories of the University are of peculiar advantage to students in the Mining Course, and enable them to become acquainted, not only with the theory of their subject, but to personally investigate its methods on a large scale.

During the first three years of the course, the men do systematic work in the several workshops and laboratories. During the last part of the Third Year and the chief part of the Fourth, they spend a large proportion of their time in the working laboratories for Ore Dressing and Metallurgy. (See § XIII.) In these latter, the general method is to assign to each student certain methods and pieces of apparatus which he must use and study out in detail, and upon which he must make a written report. In this work he is guided by the professor and demonstrator and assisted by the other students, each of whom he must in turn assist in his special work. In this way every student must acquire detailed knowledge of certain typical operations and a fair general experience of all of the other important methods in use.

9. CHEMISTRY AND ASSAYING.

Professor :—B. J. HARRINGTON, M.A., Ph.D. (Greenshields Professor of Chemistry and Mineralogy).
Lecturer :—NEVIL NORTON EVANS M.A.Sc.
Demonstrator :—ALEXANDER BRODIE, B.A.Sc.

This course includes lectures and laboratory work. In the First Year, Students of all the Departments attend a course of lectures on the laws of Chemical Combination, Chemical Formulæ and Equations, the preparation and properties of the more important Elements and their Compounds, etc. They also devote one afternoon a week throughout the session to practical work in the Laboratory where they learn the construction and use of ordinary apparatus, perform a series of experiments designed to cultivate the powers of observation and deduction, and begin Qualitative Analysis.

In the Second and Third Years, Students in the Department of Practical Chemistry attend lectures on the Chemistry of the Metals or on Organic Chemistry, and receive instruction in Qualitative and Quantitative Analysis, including gravimetric and volumetric methods and the application of electrolytic methods to the estimation of copper, nickel, etc. Blowpipe Analysis and Determinative Mineralogy also constitute part of the work of the Third Year.

In the Fourth Year, special attention is devoted to such subjects as Mineral Analysis and Assaying, and the Analysis of Iron and Steel ; but considerable latitude is allowed to Students in the choice of subjects, and Organic work may be taken up if desired.

Students of the Mining Course take Qualitative and Quantitative Analysis during the Second and Third Years, and devote considerable attention in the Fourth Year to Mineral Analysis and Assaying of various ores, fuels, etc. They also attend the class in Blowpipe Analysis and Determinative Mineralogy in the Third Year.

The Chemical Laboratories (see § XIII) are open daily (Saturdays excepted) from 9 a.m. to 5 p.m.

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10. THERMODYNAMICS.

Lecturer :—J. T. NICOLSON, B.Sc., M. Can. Soc. C.E.
Demonstrator :—

Fundamental laws and equations of thermodynamics. Application to perfect gases and to steam saturated and superheated. Efficiency of perfect heat engines. Efficiency of actual air, gas, petroleum, and steam engines.

A study of the steam engine, including wire-drawing, cylinder condensation and jacketing, and the most efficient and most econo-

mical point of cut-off. Sizes and proportions of cylinders in single, double and triple expansion engines to develop a given power. Expected indicator diagrams. Sizes and proportions of the principal types of steam generators. Comparison of practical suitability of steam and caloric engines. Theory of engine and boiler testing.

TEXT-BOOK.—Ewing's Steam Engine.

Peabody's Tables of Properties Steam.

11. GEOLOGY AND MINERALOGY.

Professor :— { B. J. HARRINGTON, Ph.D. / FRANK D. ADAMS, Ph.D.

SECOND YEAR.—A preliminary course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy (Ordinary and Honour). Petrography, Physical and Chronological Geology and Palaeontology. Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR.—Special studies in Ore Deposits, Mineralogy and Petrography ; Advanced Course in General Geology and Palaeontology ; Geology of Canada ; Practical Geology and Field-work.

For further details see Announcement of the Faculty of Arts.

NOTE.—Students of the Mining and Chemistry courses take the Honour Mineralogy of the Third Year in Arts. Mining Students take the whole Honour Course of the Fourth Year. Chemistry Students take, in addition to the ordinary Course in Geology, the Honour Mineralogy of the Fourth Year.

The Petrographical Laboratory, (See § XIII) is open to Fourth Year Mining Students during the second term.

12. ZOOLOGY.

Professor :—To be appointed.

This Course includes Elementary Physiology, Embryology, Morphology and Classification of Animals, with a general account of their habits, distribution and geological history. The lectures are supplemented by weekly demonstrations in the Redpath Museum.

13. BOTANY.

Professor :—D. P. PENHALLOW, M.A.Sc.

1. GENERAL MORPHOLOGY.—This course is designed to give a through general knowledge of the principles of General Morphology and Classification. It comprises :

(*a*) Determination of species from both dry and fresh materials ; type studies of Sphermaphytes, Pteridophytes, Bryophytes, and Thallophytes, with reference to their life histories. Gray's Structural Botany, Gray's Manual, Penhallow's Outlines of Classification, and Botanical Collector's Guide.
First Term, two hours a week.

(*b*) General Morphology and Classification ; elements of Histology and Physiology ; Biological relations of plants.
Second term, two hours a week.

2. ADVANCED ANATOMY.— This course, open to students who have taken Botany 1, is designed to give an extended knowledge of vegetable anatomy. It comprises :—

(*a*) Optics and construction of the microscope ; determination of amplifications ; micrometry ; drawings ; section cutting ; preparation of microscopic objects ; micro-chemical reactions ; study of cell contents and tissues, comparative studies of type forms of angiosperms and gymnosperms.
Four hours a week.

*(*b*) A continuation of the course in the Third Year. Critical studies of the structure and development of the Pteridophyta, Bryophyta, Thallophyta and Protophyta.
Four hours a week.

The fee for the Session in each of the above courses is $10. Students are required to supply their own slides and cover glasses.

* Students satisfactorily completing this course will be eligible to the occupation of an investigator's table held by the University at the Wood's Holl Biological Laboratory.

14. EXPERIMENTAL PHYSICS.

Professors:— JOHN COX, M.A. (McDonald Professor of Physics).
HUGH L. CALLENDAR, F.R.S. (McDonald Professor of Physics.

The instruction includes a fully illustrated course of Experimental Lectures on the general Principles of Physics (embracing, in the Second Year—*The Laws of Energy—Heat, Light and Sound ;* in the Third Year—*Electricity and Magnetism*), accompanied by courses of practical work in the Laboratory in which the Students will perform for themselves experiments, chiefly quantitative, illustrating the subjects treated in the lectures. Opportunity will be given to acquire experience with all the principal instruments used in exact physical and practical measurements. Students of Electrical Engineering will continue their work in the Laboratory in the Fourth Year, when they will undertake, under the guidance of the Professors.

advanced measurements and special investigations bearing on their technical studies.

Fourth Year Electrical Students.— Students of Electrical Engineering will continue their work in the Physical Laboratory in the Fourth Year. The following is a brief outline of the Course :

Magnetic elements and measurements. Use of Variometers. Testing magnetic qualities of iron.

Theory and practice of absolute electrical measurements.

Comparison and use of electrical standards, of resistance, E.M.F., self-induction, and capacity.

Principles of construction of electrical instruments.

Testing and calibration of ammeters, voltmeters, and wattmeters.

Insulation and capacity tests. Electrometers and Ballistic methods.

Construction and treatment of storage cells. Testing for capacity and rate of discharge.

Electric light photometry.

An additional course on telegraph and telephone work is under consideration.

Graduate Courses and Research Work.

In the course of the Past year, the following are the principal researches which have been carried on in the Laboratory.

On the velocity of X Rays, on the action of X Rays on Selenium, and various other experiments on the nature and properties of X Rays, by Professors Cox and Callendar.

On the temperature variation of the Electromotive Force of the Clark Standard Cell, by Professor Callendar and Howard, T. Barnes.

On the Thermal Transpiration of Gases, by Professor Callendar.

On the Specific Heat of Mercury, by Prof. Callendar and H. T. Barnes.

On the Cast-Iron, Wrought-Iron Thermocouple, by H.M. Tory.

Comparison of the Chatelier and Callendar Pyrometers, by H. M. Tory.

On the Temperature-Variation of the Hysteresis, Coercive Force, and Residual Magnetisation of Iron, by F. H. Pitcher.

On the conductivity of Cast-Iron, Wrought-Iron, and Copper, and on the Thomson and Pelletier effects in those metals, by R. O. King.

On Measurements of the Temperature of the River in winter, by means of a Differential Platinum Thermometer, with reference to the conditions of formation of Frazil and Anchor Ice, by H. T. Barnes.

On a new form of Hysteresis Tester, by L. W. Gill.

Prof. Callendar has also been engaged in conjunction with Prof. Nicolson, in the Thermodynamic Laboratory of the McDonald En-

gineering Building, in a series of experiments on the Law of Condensation of Steam and other questions relating to the theory of the Steam-Engine ; most of the results of which are now in course of publication by the Institution of Civil Engineers, of London, England. The observations on Soil Temperatures with Electrical Thermometers, have been continued, and the results published by Professors Callendar and McLeod in the Transactions of the Royal Society of Canada.

The following are some of the sections in which special provisions have been made for advanced physical work :—

Heat.—Thermometry. Comparison and verification of delicate thermometers. Air thermometry. Measurement of high temperatures. Electrical resistance thermometers and pyrometers. Thermo-electric pyrometers. Absolute expansion of mercury.

Calorimetry. Mechanical Equivalent of Heat. Variation of specific heat with temperature. Latent heat of fusion and vaporisation. Heat of solution and combustion. Electrical methods.

Radiation and conduction of heat with special methods and apparatus. Dynamical theory of gases.

Viscosity. Surface Tension. Variation of properties with temperature.

Light.—Photometric standards. Spectrophotometry. Theory of colour vision. Spectroscopy and spectrum photography. Compound prism spectrometers. Six inch and 2½ inch Rowland Gratings. Study of spectra of gases. Fluorescence and anomalous dispersion. Polarimetry. Landolt and other polar-meters. Form of wave surface.

Sound.—Velocity in gases and various media. Absolute determinations of period. Harmonic analysis of sounds. Effects of resonance and interference.

Electricity and Magnetism.—Magnetic properties. Influence of stress and torsion. Influence of temperature. Effects of hysteresis. Magneto-optics. Other effects of Magnetisation. Diamagnetism.

Electrical standards and absolute measurements. Calibration of electrical instruments.

Insulation and capacity testing. Electrometer and Ballastic methods. Temperature variation of resistance and E.M.F. Thermo-electric effects. Electrolysis. Chemistry of primary and secondary batteries. Resistance of Electrolytes, Polarisation.

Electric discharge in gases and high vacua. Dielectric strength. Behaviour of insulators under electric stress. Specific inductive capacity. Electric oscillations. Electro-magnetic optics. Alternating currents of high frequency and voltage.

N.B.—Students taking a Graduate Course will receive guidance in any advanced Mathematics required in connection with their work.

15. MATHEMATICS AND MATHEMATICAL PHYSICS.

Professor :—G. H. Chandler, M.A.

Lecturer :—R. S. Lea, Ma.E.

The work in this department is conducted from the outset with special reference to the needs of Students of Applied Science. Much time is given to practice in the use of Mathematical Tables, particular attention being paid to the solution of triangles, the tracing of curves, graphical representation of functions, reduction of observations, etc. Areas, volumes, masses, centres of gravity, moments of inertia, etc., are determined both by calculation and by observation or experiment, and each method is made to supplement or illustrate the other. In this connection, use will be made, in actual laboratory practice, of a large amount of apparatus, such as balances, Atwood's Machines, inclined planes, chronographs, rotation apparatus of various kinds, etc. The different methods of approximation, the reduction of results of experiments and observations by least squares, etc., will also receive due attention.

The lectures will embrace the following subjects :—

First Year.—Euclid, to the end of Book VI., with exercises on Loci, Transversals, etc., Algebra, including the Binomial Theorem. Elements of Solid Geometry and of Geometrical Conic Sections. Plane and Spherical Trigonometry. Elementary Kinematics and Dynamics.

Second Year.—Analytic Geometry. Differential and Integral Calculus. Dynamics of Solids and Fluids.

Third Year.—Continuation of Analytic Geometry, Calculus and Dynamics.

Classes may also be held for advanced (optional) work in these or other subjects.

N.B.—Students taking Graduate Courses will receive guidance in any advanced Mathematics required in connection with their work.

Text-Books (Partial list).—Todhunter's or Mackay's Euclid, Hall & Knight's Elementary Algebra, Wilson's Solid Geometry and Conic Sections, Wentworth's Analytic Geometry, Chandler's Calculus, Blakie's Dynamics, Wright's Mechanics, Bottomley's Mathematical Tables, Chambers' Mathematical Tables.

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16. ENGLISH LANGUAGE AND LITERATURE.

Professor :—C. E. Moyse, B.A. (Molson Professor of English Language and Literature.

Lecturer :—C. W. Colby, Ph.D.

First Year.—A special course on English Composition.

17. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of the Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

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§ XIV. LABORATORIES.

In the Laboratories the Student will be instructed in the art of conducting experiments, a sound knowledge of which is daily becoming of increasing importance in professional work.

1. ASSAYING LABORATORY. See MINING and METALLURGICAL LABORATORIES.

2. ASTRONOMICAL OBSERVATORY. See GEODETIC LABORATORY.

3. CEMENT LABORATORY. See TESTING LABORATORIES.

4. CHEMICAL LABORATORIES.—The present Chemical Laboratories are three in number,—one for Students of the First Year ; one for Students of the Second and Third Years, in which it has been found necessary to carry on both qualitative and quantitative work ; and one intended for Students of the Fourth Year, and for special Students who may wish to carry on original investigations. There is also a room in the basement which is fitted up for fire-assaying.

The Laboratories are supplied with five balances by Becker & Sons, one Bunge and an assay balance by Troemner. There are also a Laurent polariscope, a spectroscope by Dubosque, gas combustion and melting furnaces, apparatus for electrolytic work, etc., etc. Distilled water is obtained by means of a special boiler placed in the basement, which also supplies the steam for drying-ovens, steam-baths and drying-chamber in the upper Laboratories.

The Chemistry and Mining Building which Mr. W. C. McDonald, with his wonted liberality, is erecting for the University, will, it is hoped, be ready for occupation some time during the Session of 1897-98. The building, in addition to three large general laboratories accommodating about 200

students at a time, will have a number of smaller laboratories and rooms for special purposes and for research work in inorganic and organic chemistry. Among the special rooms may be mentioned those for physical chemistry, iron and steel analysis, water analysis, gas analysis and photography. Provision will also be made for practical work in mineralogy and petrography, subjects which have come to be essentially departments of chemistry and physics, and which are at the same time intimately related to mining and metallurgy.

The principal lecture-room, extending through two floors, is entered at the ground level, but each of the higher floors will also have its class-room. On the second there will be a library, and also a museum for chemical products. The rooms for allied purposes will, as far as possible, be grouped together on the same floor, and there will be a large elevator running from the basement to the top storey. The building will be practically fire-proof, and will be lighted throughout by electricity.

5. DYNAMICS, LABORATORY OF. See MATHEMATICS and DYNAMICS, LABORATORY OF.

6. ELECTRICAL LABORATORIES.—These consist of :—

(1) *The Electrical Laboratory proper*, where the standard instruments are kept and experiments made in the electrical course. The instruments comprise amongst others, two of Lord Kelvin's electric balances, a Thomson galvanometer, four d'Arsonval galvanometers, two Siemens dynamometers, two Kelvin electrostatic voltmeters, a complete set of Weston ammeters and voltmeters, besides resistance coils, etc.

Current is supplied to all parts of the room from one of the lighting dynamos direct and from the accumulator room.

During the past session a new standard speed indicator has been set up in the Electrical Laboratory, for the purpose of measuring the frequency of alternating currents by comparison with a standard tuning fork. Several measurements have already been made with this instrument on the self-induction of coils of different sizes and shapes.

(2) *The Magnetic Laboratory*.—Here are set up a ballistic

galvanometer, Ewing's curve tracer, and a variety of apparatus made in the College for magnetic tests of various kinds.

(3) *The Dynamo Room.*—The apparatus here consists of a 25 KW Edison dynamo, two 12 KW Edison dynamos, a 12 KW Mordey alternator made specially for this laboratory (the coils on the armature can be moved round through any angle, and two or three currents of any phase difference obtained), a 7 KW Victoria dynamo, a 7 KW Fort Wayne dynamo, a 6 KW Thomson-Houston arc-light dynamo, a 15 KW Thomson-Houston incandescent dynamo, and a 5 KW Brush arc-light dynamo. All these are driven off magnetic clutch pulleys by an 88 horse power MacIntosh & Seymour engine. There are also here several different transformers, motors, arc lamps, etc., and a 3 KW motor generator.

(4) *The Lighting Station.*—This comprises a 30 KW Edison-Hopkinson dynamo, and a 30 KW Siemens dynamo, each driven by a Willans high speed engine. The switchboard is arranged so that the building—containing twelve hundred lights—can be lighted by the two dynamos in series, or, if the load is light, by one running on two-wire system or by accumulators. The whole is in every respect typical of the best English and American practice.

(5) *The Accumulator Room.*—Containing Crompton-Howell storage cells of a united capacity of eight hundred ampere hours.

During the past year, the advanced students in the Electrical Engineering Course have carried out an extensive series of experiments on different subjects of interest.

The electric elevator in the building formed the subject of an enquiry into the regulating and running of electric elevators generally, and much useful information was obtained as to the efficiency of worm gearing.

Tests of efficiency were made on transformers submitted by the makers, by a new method.

The photometer has been used for testing the candle-power and efficiency of a large number of incandescent lamps of different types.

Several samples of iron have been sent in for magnetic experiments, and have served a useful purpose in the students' work.

The efficiency of the magnetic clutches used in the dynamo room, which were designed at the College, was determined by a series of

tests ; these clutches have been running for three years, and have proved perfectly satisfactory.

An extended series of experiments has been made on armature reaction on some of the dynamos in the laboratory; these are now being completed, and will, it is hoped, give valuable results.

Arrangements are now being made for establishing a street railway testing department ; a standard street railway motor and other apparatus have been kindly lent by the Canadian General Electric Company for this purpose.

7. MATHEMATICS AND DYNAMICS, LABORATORY OF.—The equipment of this Laboratory includes instruments for the measurement of distance (scales, micrometers, cathetometer), of area (planimeters), of volume (flasks, graduated vessels, etc.), of time (clocks, chronographs), of mass (beam and spring balances) ; it is also provided with a mechanical integrator, specific gravity balances, Atwood and Morin machines for experiments on the Laws of Motion, inclined planes, a variety of rotation apparatus (gyroscope, Maxwell's dynamical top, torsion balance, pendulums, etc.), air-pumps, thermometers, barometers, etc.

The Mathematical Laboratory is used chiefly in connection with the course in Dynamics. Lectures are given on the fundamental and derived units of the Science, as well as on the Laws of Motion, and deductions from the same. When the students have in this way been made acquainted with some of the ideas of the subject, they are admitted to the laboratory, where experiments of a progressive character are assigned to them. These experiments are in all cases quantitative, and embrace the measurement of mass by means of accurate physical balances, of intervals of time by clock and chronograph, and of distance by means of scales, screw micrometers, etc. They then proceed to the measurements of areas, volumes, velocities, accelerations, forces, specific gravities, friction, and also to pendulum experiments, etc. The equipment of the laboratory for this work is very complete, embracing as it does the ordinary instruments for the purpose to be found in most physical laboratories, together with a variety of apparatus specially constructed for this laboratory. Particular attention is given in the lectures to the principles of observing, in general, the sources of error, etc. ; the whole course having reference to the subsequent work of the student in the Physical and Engineering Laboratories.

8. MECHANICAL LABORATORY.--In this Laboratory experiments will be carried out on the efficiency of belts, shafting, and machine tools. Governors of all types will be tested with the chronograph. Lubricants by journal friction-testing machine. Sliding and rolling friction and the stiffness of ropes will also form subjects for experiment.

Much valuable apparatus has been added to this laboratory since the opening of the Buildings, all of which has been made in the mechanical workshops, and mainly by students. The Thurston oil tester and the *Bunte's* viscosimeter, which formed the original equipment, have been supplemented by a hydraulic dynamometer for testing the efficiency of machines, a rotary transmission dynamometer on a new principle, with recording attachment, a pneumatic gauge for measuring delicate pressures down to the 3000th of a lb. per square inch, two other draft gauges, a belt transmission dynamometer and a belt-testing apparatus.

With these instruments, and with the machines and other appliances in the workshops, experiments are carried on during the winter session, and students sometimes carry out researches during the summer months.

Many visits have also been paid to engineering works and manufactories of importance.

9. METALLURGICAL LABORATORY See MINING and METALLURGICAL LABORATORIES.

10. MILLING ROOM. See MINING and METALLURGICAL LABORATORIES.

11. GEODETIC LABORATORY.—The equipment of this laboratory consists of :—

(1) Linear instruments.
- (*a*) A Rogers comparator and standard bar for investigating standards of length.
- (*b*) A fifty-foot standard and comparator for standardizing steel bands, chains, tapes, rods, etc.
- (*c*) A Whitworth end-measuring machine and set of standards.
- (*d*) A Munro-Rogers linear dividing engine.

(2) Circular instruments.
- (*a*) A Rogers circular comparator and dividing engine.
- (*b*) Two level triers.

(3) Time.

(*a*) An astronomical clock and clock circuit in connection with the observatory clocks.

(*b*) Chronometers running on mean and sidereal time.

(*c*) Chronograph.

(4) Gravity.—A portable Bessel's reversible pendulum apparatus, with special pendulum clock and telescopic apparatus for observing coincidences of beats.

(5) A water gauge apparatus for testing aneroid barometers.

(6) Magnetic instruments :

(*a*) A Kew dip circle.

(*b*) A Kew filar magnetometer.

The laboratory is constructed with double walls and enclosed air spaces, and has a special heating apparatus, so that the temperature within may be brought to, and held at, any desired degree.

The ordinary course of instruction in this laboratory is described in XII. Art. 3.

ASTRONOMICAL OBSERVATORY.—The observatory equipment for the purpose of instruction in practical astronomy consists of :—

1. A Bamberg prismatic transit with zenith attachment.
2. Two astronomical transits for meridian observations. Collimating telescopes.
3. A Troughton & Simms zenith telescope.
4. An astronomical transit in the prime vertical.
5. Sidereal and mean time clocks and chronometers.
6. Chronograph and electrical circuits by which observations and clock comparisons within or without the observatory may be made.

12. HYDRAULIC LABORATORY.—Here the Student will study practically the flow of water through orifices of various forms and sizes, through submerged openings, over weirs, through pipes, mouth-pieces, etc.

The equipment of this laboratory includes :—

1. A large Experimental Tank, 30 ft. in height and 25 sq. ft., in sectional area. With this tank experiments are conducted on the flow of water through orifices, either free or submerged. By a simple arrangement the orifices can be rapid-

ly interchanged without lowering the head, and with the loss of only about one pint of water. The indicating and measuring arrangements connected with the tank are exceedingly delicate and accurate, all times being automatically recorded by an Electric Chronograph ; and valuable results have already been obtained. By means of a special connection with the city water-supply, the available head of water may be increased up to 280 ft.

2. An Impact Machine, which renders it possible to measure the force with which water flowing through an orifice, nozzle, or pipe, strikes any given surface, and also the impulsive effect of the water entering the buckets of hydraulic motors.

3. A Rife's Hydraulic Ram.

4. A Jet Measurer specially designed for investigating the dimensions of the jet produced in the phenomena known as "the inversion of the vein." With this apparatus it is possible to determine, within .001 inch, the dimensions of a jet in any plane and at any point of the path.

5. Numerous orifices, nozzles and mouth-pieces.

6. A specially designed stand-pipe, with all the necessary connections for pipes of various sizes for investigations on frictional resistance. The pressures are measured by recording gauges, etc.

7. A flume about 35 feet in length, by 5 ft. in width by 3 ft. 6 ins. in depth.

8. Weirs up to 5 ft. in width, and with a depth of water over the sill varying from nil to 8 inches. A weir-depthing machine, with three adjustable heads, gives the surface depth of the stream at any three points in a transverse section. The velocity of the stream is also determined by means of a double Pitôt tube.

9. Numerous hydraulic pressure-gauges.

10. A mercury column 60 feet in height.

11. Gauge-testing apparatus.

12. Various rotary, and piston meters, and a Venturi meter.

13. Apparatus for illustrating vortex motion.

14. Apparatus for illustrating vortex ring motion, and for determining the critical velocity of water flowing through pipes.

15. Five specially built gauging tanks with suitable indicators, and having a capacity of 800 cubic feet. Also other portable tanks.

16. Transmission and absorption dynamometers.

17. An experimental centrifugal pump, which can be tested with varying heights of suction and discharge.

18. An inward-flow turbine, a new American turbine, a Pelton, and other motors and turbines.

19. Standard gallon and litre measures with glass strikes. This Laboratory is also provided with a set of pumps, specially designed for experimental work and research. They are adapted to work under all pressures up to 120 lbs. per sq. in., and at all speeds up to the highest found practicable. The set is composed of three vertical single acting plunger pumps of 7 in. diam., 18 in. stroke, driven by one shaft. They are to have two interchangeable valve chests, and it is arranged that both the valves and their seats may be removed and replaced by others. The pumps are also provided with a double set of continuous triple recording indicators designed in the laboratory and having electrical connections. With these, an accurate record of the history of the suction and discharge valves may be obtained at any given time, all fluctuations of time, speed, pressure, etc., being automatically recorded.

In the Hydraulic Laboratory, investigations are being carried out on the flow of water through orifices of different sizes and forms, on the effect of viscosity upon the flow, and for the purpose of determining the co-efficients of discharge through conical nozzles.

Similar experiments and also experiments on the flow of water over weirs have been directly conducted by the students, who are thus able to obtain experience in the scientific treatment of hydraulic problems, which will certainly be of the utmost value to them in their future career.

During this Session, in addition to the ordinary class exercises, extensive tests have been made on the stretching and bursting strength of hose.

13. Mining and Metallurgical Laboratories—The McDonald Chemistry and Mining Building, now being erected, will be under roof at an early date, and the Mining and Metallurgical Laboratories, to be situated in the lower part of the structure, will, it is expected, be fully equipped for the beginning of the session of 1897-98.

These laboratories, with the lecture rooms and library, the professor's office, and rooms for apparatus, supplies and fuel, are very conveniently arranged individually and with regard to one another, and occupy the lower part of the main building and the whole of both wings. The total floor space covered is approximately 12,500 square feet, divided as follows :—

Mining and Ore-Dressing Laboratory, or Milling Room, 3,500 square feet ; Metallurgical Laboratory, or Furnace Room, 2,500 square feet ; Assay Laboratory, 2,000 square feet ; Wet Assaying Rooms, 500 square feet ; Technical Lecture Room, 600 square feet ; Library and Drawing Room, 500 square feet ; Offices, Stores and so forth, 3,000 square feet.

The two rooms first mentioned are of great size, and will be the chief laboratories of the department. In these it will be possible to take any ores of gold, silver, copper, or lead, in the condition in which they come from the mines, and to treat them from beginning to end precisely as they are treated in the ore-dressing works and smelting plants of the West. They therefore may be considered a small commercial plant for the actual production of metals. They will differ from commercial plants, however, in that an ordinary ore-dressing establishment or smelter is designed to treat the ores of only one district and sometimes of only one part of a district. The University Laboratories must of course be adapted to all ores now found or likely to be found in the Dominion, and will therefore contain a greater number of pieces of apparatus than are to be found in any one commercial establishment, although probably no case will come up when all of these machines will be used for any one test.

The Milling-Room will be equipped with a complete working plant, capable of treating about one carload or 10 tons of ore per day, the chief pieces of apparatus being :—Rock Crushers of three kinds (" Blake," " Dodge " and " Gates"), to break the large pieces of ore to small size. Stamp mills of 300, 600, and 900 lbs., respectively, for the fine crushing and amalgamation of gold ores : Huntington mill, for crushing and amalgamating. Rolls, both coarse and fine, to reduce ores to powder when necessary. Trommels and

sieves, for sizing the crushed ores. Hartz and Collom jigs for concentrating minerals by gravity. Revolving, bumping, and belt tables, for separating valuable minerals contained in fine sands and crushed rock. Plates and pans, for amalgamating gold and silver ores. Spitzkasten, spitzlutten, magnetic separators, and various other special pieces of ore-dressing apparatus.

The machinery above mentioned is not in miniature; it is of full size, such as the graduates will afterwards find in use in commercial establishments. It is, however, to be so arranged that each piece can be worked by itself, taken apart and cleaned up ; and such of the larger pieces as cannot be used for small quantities of material are to be duplicated in miniature. The laboratory, while thus adapted to illustrate continuous work on a comparatively large scale, is even more perfectly designed for experimental work on as small a scale as is compatible with accuracy of result.

The Metallurgical Laboratory is to be fitted with a Water-jacket blast-furnace, 24 ins. inside diameter, for smelting lead and copper, and with the necessary blast apparatus ; also with reverberating furnaces, a Bruckner cylinder furnace, a reverberatory roasting-furnace, an English cupellation-furnace, and several crucible furnaces.

It is also to have a complete set of apparatus for the chlorination and leaching of silver and other ores, and a cyanide extraction-plant for gold ores, these being the new methods which are revolutionizing the gold metallugy of the world and producing such extraordinary yields in the mines of South Africa and Australia.

These two laboratories are very large and well lighted, and are each 20 ft. high in the clear. Close to them are the rooms for storage of ores, fuel, and so forth, from which lines of floor tracks lead to the elevator and connect with the crushers and furnaces. There is also to be an overhead system of tramways, with travelling hoists and buckets. Material can therefore be moved from one point to another with the greatest ease, and pieces of apparatus can be readily taken apart, and if necessary, moved by the same means.

It is not the purpose of the University to use these laboratories for commercial work, although they are quite large enough for such service. They are to be used solely for educational work and for investigation ; but, owing to their thoroughly practical nature, instruction given in them will be of immensely greater value to the students than could be the case if the work were done in miniature ; and, at the same time, the investigations made by means of such apparatus will be of great use to the mining and metallurgical community, as they can be carried out in all respects under working conditions, and will, therefore, be free from the disturbing causes likely to interfere with attempts to reproduce commercial processes on a small scale.

THE ASSAYING LABORATORY is to be equipped with a complete set of muffle-and crucible furnaces, some of each being arranged for gas and oil and others for coke or charcoal, as in some parts of the West one of these fuels must be used, while in other parts another is found more desirable. Connected with this laboratory are rooms with pulp-and assay-balances, and other equipped for wet analysis of ores.

14. MODELLING LABORATORY.—A Laboratory for modelling in clay, as part of the work in the Architectural Department, is arranged in connection with the Cement-testing Laboratory. Third Year Architectural Students follow a regular course in Modelling under the instruction of the Assistant Professor of Freehand Drawing. The Laboratory is fully equipped for the work, including the making of plaster casts from the executed clay models.

15. PETROGRAPHICAL LABORATORY.— The Petrographical Laboratory, containing the chief rock collections of the University, is situated in the east wing of the Arts building, but will be transferred to the new Chemistry and Mining building as soon as this building is completed. It is arranged for the use of Students in the Mining Course as well as for those desiring to take advanced work, and is provided with a number of petrographical microscopes by Seibert and Crouch, as well as with models, sets of thin sections, electro-magnets, heavy solutions, etc., for petrographical work.

For advanced work and petrographical investigation Dr. Adams' extensive private collection of rocks and thin sections is available for purposes of study and comparison.

16. PHYSICAL LABORATORY.—The McDonald Physical Laboratory contains five storeys, each of 8,000 square feet area. Besides a lecture theatre and its apparatus rooms, the building includes an elementary laboratory nearly 60 feet square; large special laboratories arranged for higher work by advanced students in Heat and Electricity, a range of rooms for optical work and photography; separate rooms for private thesis work by Students; and two large laboratories arranged for research, provided with solid piers and the usual standard instruments. There are also a lecture room, with apparatus

room attached, for Mathematical Physics, a special physical library, and convenient workshops. The equipment is on a corresponding scale, and comprises : (1) apparatus for illustrating lectures ; (2) simple forms of the principal instruments for use by the students in practical work ; (3) the most recent types of all the important instruments for exact measurement, to be used in connection with special work and research.

The following extract from the report for the year 1894-95 of the Physics Building Committee will indicate the general nature of the equipment.

Of the advanced practical work, the greater part hitherto, owing to the arrangement of the Electrical Engineering course, has been confined to Electricity and Magnetism. It may be of some interest, therefore, to give a brief abstract of the work of the last year in this direction, together with a description of the principal electrical standards and instruments of precision in the McDonald collection.

Resistance Standards.—There are thirty standard resistance coils of various patterns, including the B.A., the Board of Trade and the German, with a few others, ranging in value from 1,000 ohms to one ten-thousandth, and adapted for different purposes. These have been tested and compared, and their values are found to agree as closely as could be expected with the Cambridge certificates, and those of the Reichsanstalt and the makers. The temperature co-efficients of a few have also been determined. The comparisons have been made chiefly with Nalder's pattern of the Carey-Foster Bridge.

There is also a duplicate of the Fleming Bridge used at Cambridge, presented by the Duke of Devonshire.

Resistance Boxes.—The collection of resistance boxes includes almost all the best types. There is a Thomson-Varley slide-box by Nalder, which has proved extremely useful and accurate. Among the other boxes may be mentioned : two megohm boxes and four 100,000 ohm boxes of different patterns ; a four dial and a six dial P.O. box ; and a bar-dial box of Professor Anthony's pattern ; also a compensated resistance box with mercury contacts, reading from 0 to 50 ohms continuously by the Carey-Foster method ; this is extremely useful for the accurate determination of resistances which cannot be made up of any simple combination of standards, and has been accurately calibrated throughout.

For the comparison and determination of small resistances, there is a Kelvin conductivity bridge and a Lorenz apparatus, with the improvements made by Prof. V. Jones, which is now being completed under his supervision.

Current Standards —There is a Kelvin composite balance, which can also be used as a voltmeter, and wattmeter, and two Siemens dynamometers. The constants of these have been determined by the voltametric method, and found to be accurate to one-half of one per cent. They have been used for calibrating common types of alternate current instruments. There is also a set of 4 large storage cells with convenient commutators and resistances for furnishing large steady currents for the testing of ammeters and low resistances, and for other purposes. This equipment is similar to that in use at the Board of Trade in England and in the laboratories of some leading instrument makers.

As an absolute current standard there is a duplicate of the Weber electro-dynamometer made by Latimer Clark for the Committee of the British Association, the coils of which were wound by Clerk Maxwell, and used by Lord Rayleigh in his standard experiments. The coils of this instrument have been removed, and measured, and it is proposed to use it for an absolute determination of the E. M. F. of a Clark cell.

Insulation and Capacity Tests.—For these and other tests there is a suitable collection of delicate reflecting galvanometers of the astatic, ballistic, differential and D'Arsonval types. The most delicate of these has a resistance of 110,000 ohms, and a figure of merit of upwards of 60,000 megohms with a 20 second swing.

There are eight quadrant electrometers of different types, which have been set up and used for various insulation and other tests. We have also one Kelvin absolute electrometer, and smaller portable electrometers and gauges on the same principle.

As a standard of capacity there is a cylindrical air condenser of the B.A. pattern. This was measured, cleaned, and set up by H. M. Tory in November, 1893. Its capacity has not been determined absolutely. By comparison with our certificated mica standards, it was found to be nearly one-two-hundredth of a microfarad, the value intended by the maker.

The mica-standards and subdivided boxes have been carefully compared with each other and tested for insulation and absorption. They are above the average in quality and accuracy.

For the purpose of studying the behaviour of insulators under the influence of long continued and intense electric stress, a subject which is now becoming of importance in connection with the transmission of power at very high voltage, there is in preparation a transformer capable of working up to 100,000 volts of sufficient power to give useful practical results.

Magnetic Tests.—Determinations of the dip and horizontal intensity have been made with the Kew instruments in different parts of the

laboratory, and of the horizontal intensity with two other types of magnetometer. The values obtained showed a very satisfactory agreement, and were in all cases verified by the local and bifilar variometers. A preliminary magnetic survey with the portable variometers has been made of all the laboratories in which experiments affected by the horizontal intensity are carried on. The results have been of great utility, and show that the precautions taken in erecting parts of the building with copper pipes and heating apparatus were by no means unnecessary, and might even have been extended with advantage to the elementary laboratories. It was also found that the disposition of the motors and machinery at the other end of the building was such as to produce a magnetic disturbance scarcely appreciable for most purposes in the portions devoted to delicate work.

A complete set of apparatus for testing the magnetic quality of iron and steel, by various methods, has also been provided.

Considerable progress has been made with the equipment for advanced work in Optics, Acoustics and Heat, but little work has as yet been done by the students in these branches, owing to the arrangement of the present courses of study. The collection of apparatus is on a corresponding scale to the electrical equipment, and includes several fine and valuable instruments, such as a set of Ewing Seismographs, on which records of two earthquakes have already been obtained; a Rieffler standard clock; a set of direct-reading electrical thermometers reading to .01° Fahr., which are now being used for determining soil temperature; a six-inch Rowland grating, with mountings and accessories by Brashear; a complete set of spectrum and Crooke's tubes by Geissler; mechanical models and apparatus from the Engineering Laboratory and the Instrument Company at Cambridge.

17. Testing Laboratories.—The principal experiments carried out in these will relate to the elasticity and strength of materials, friction, the theory of structures, the accuracy of springs, gauges, dynamometers, etc. The equipment of this laboratory includes:—

1. A Wicksteed 100-ton and an Emery 75-ton machine for testing the tensile, compressive and transverse strength of the several materials of construction. To the former has been added a specially designed arrangement, by which the transverse strength of girders and beams up to 26 ft. in length can be determined. These machines are provided with the holders required for the various kinds of tests, and new hol-

ders have also been specially designed and made in the laboratory for investigating the tensile and shearing strength of timber, for wire rope and belt tests, etc. Numerous attachments have also been made to the machines, which have already increased their efficiency. The most recent addition is a double-bearing support for transverse testing.

2. An Impact Machine, with a drop of 30 ft., and with gearing which will enable specimens to be rotated at any required speed, and the blows to be repeated at any required intervals. By means of a revolving drum, a continuous and accurate record of the deflections of the specimens under the blows can be obtained.

3. An Unwin Torsion Machine with a specially designed angle-measurer, by which the amount of the torsion can be measured with extreme accuracy.

4. An Accumulator, furnishing a pressure of 3,600 lbs. per square inch. which is transmitted to the several testing machines, and ensures a perfectly steady application of stress, which is impossible when any form of pump is substituted for an Accumulator.

5. A Blake and a Worthington Steam Pump, designed to work against a pressure of 3,600 lbs. per square inch. The Accumulator may be actuated by either of the pumps, and, if at any time it is desirable to do so, either of the pumps may be employed to actuate the testing machine direct. When in operation the work of the pump and the accumulator is automatic.

6. Extensometers of the Unwin, Martens, Marshall and other types. The Extensometer equipment has recently been enriched by seven sets of improved extensometers apparatus designed and made in the laboratory.

7. An autograph recording stress strain apparatus.

8. Portable cathetometers, and also a large cathetometer specially designed and constructed for the determination of the extensions, compressions and deflections of the specimens under stress in the testing machines.

9. An Automatic Electric Motor Pump for actuating the

Accumulator ; also various electric motors for working the several machines.

10. A drying oven for beams up to 26 ft. in length. The hot air in this oven is kept in circulation by means of a fan driven by an electric motor.

11. Numerous gauges, amongst which may be specially noticed an Emery Pressure Gauge, graduated in single lbs. up to 2,500 lbs. per square inch. The whole of the testing machines are on the same pressure circuit, and are connected with the Emery gauge and also other standard gauges, including recording gauges. This arrangement provides a practically perfect means of checking the accuracy of the testing.

12. Special apparatus and recording gauge for the testing of hose, etc.

13. Dynamometers for measuring the strength of textile fabrics, the holding power of nails, etc.

14. Apparatus for determining the elasticity of long wires.

15. Apparatus for determining the hardness of materials of construction.

16. Zeiss and other Microscopes.

17. Delicate chemical and other Balances. A very important part of the equipment is the Oertling Balance, capable of indicating with extreme accuracy weights of from .00001 lb. up to 125 lbs.

18. Micrometers of all kinds.

In the laboratories more especially devoted to the determination of the strength of materials, a very extensive investigation, in which the Third and Fourth Year students have taken part, has been carried out on the strengths of certain Canadian timbers. The experiments have now extended over a period of more than three years, and the results have been incorporated in a paper. The experiments have numbered some thousands, and are being continued.

An interesting investigation is also being conducted as to the strength and elasticity of iron and steel tubes under internal pressure.

During the session, in addition to the ordinary class exercises, important experiments have been made on the strength of car axles and on the strength and stiffness of various forms of rail-joint as compared with the solid rail.

18. CEMENT LABORATORY.—The importance of tests of

the strength of mortars and cements is very great. The equipment of the Laboratory for the purpose is on a complete plan, including :—

(1) Three one-ton tensile testing machines, representing the best English and American practice.

(2) One 50-ton hydraulic compressive testing machine.

(3) Volumenometers for determining specific gravity and for determining the carbonic acid in the raw material.

(4) Faija steaming apparatus for blowing tests.

(5) Mechanical hand and power mixers.

(6) Apparatus for determining standard consistency.

(7) Vicats and Gilmore's needles for determining set.

(8) Weighing hopper, spring and other balances.

(9) Gun metal moulds for tension, compression and transverse test pieces, and special moulds for placing mortar into the moulds under a uniform pressure, which, together with the mechanical mixers, enable the personal error to be eliminated.

(10) Sieves of 20, 30, 40, 50, 60, 70, 80, 100, 120 and 180 meshes per lineal inch for determining the fineness.

The laboratory is also fitted with copper-lined cisterns, in which the briquettes may be submerged for any required time, and with capacious slated operating tables, bins and tin boxes for keeping the cement dry for any period.

In the Cement Testing Laboratory, researches have been made on the strength of mortars set under pressure, the effect of frost on natural and Portland cements, the effect of sugar on lime and cement mortars, the strength of lime and cement mortars and of the bricks in brick piers, the effect of fine grinding on the adhesive strength of cements, of using hot water in mixing mortars. Continued tests on the strength of concrete blocks in series are made by Fourth Year Students.

In addition to these researches, a large amount of work is done each year by the Third Year students, in investigating the specific gravity, fineness, setting properties, constancy of volume, and the tensile, compressive and transverse strengths of cements, both neat and with the sand. A special investigation is now being carried on on the new material called "Sand-Cement" which is being introduced on the Canadian market.

19. THERMODYNAMIC LABORATORY.– The Thermodynamic Laboratory is furnished with an experimental steam engine of 100 I.H.P., specially designed for the investigation of the behaviour of steam under various conditions ; there are four cylinders, which can be connected so as to allow of single, compound, triple or quadruple expansion, condensing or non-condensing, with or without jackets. The measurements of heat are made by large tanks, which receive the condensing water and the condensed steam. There are two hydraulic absorption brakes for measuring the mechanical power developed, and an alternative friction brake for the same purpose. Besides this large steam engine, a high speed automatic cut-off by Robb-Armstrong of Amherst, N.S., an Atkinson Cycle, and an Otto gas engine, a Stirling hot air engine by Woodbury Merrill of Ticonderoga, are provided and completely fitted for purposes of measurement and research. Many smaller instruments are provided or are in course of construction for illustrating the general principles of thermodynamics, such as calorimeters, delicate thermometers and gauges, a mercury column apparatus for investigating the properties of superheated steam and other working fluids, draft gauges, pyrometers, fuel testers, indicators, planimeters and a Moscrop recorder.

A 40 horse power two-stage air compressor of modern design for a central station is under construction in the workshops of the College, and will, it is hoped, be added to the Laboratory during next session.

Of the six boilers which supply steam, four are fitted for experimental purposes.

In the Thermodynamic Laboratory, the experimental engine has been completely fitted for testing, the cylinder drains altered, and a new set of jacket drains fitted, so that measurements of all jacket steam can now be made separately,—a unique feature in a quadruple engine. About fifty trials have been made. The experimental boiler has been mounted for forced draft trials ; two of the Babcock-Wilcox boilers have been completely fitted up for experimental work, and with them about forty full boiler trials have been carried out.

Many experiments have also been made with the Robb automatic cut-off engine, fifty full trials having taken place, six of them with

Hirn's analysis. The Atkinson gas engine and the hot air engine have also been tested a number of times. A mass of apparatus for testing the dryness of steam (including separating, throttling and super-heating calorimeters), a steam orifice, a Penberthy injector and a fuel calorimeter have been permanently fitted up, and form, together with numerous pyrometers, indicators and springs, the subjects of the preliminary part of the course.

§ XV. MUSEUMS.

The Peter Redpath Museum contains large and valuable collections in Botany, Zoology, Mineralogy and Geology, arranged in such a manner as to facilitate the work in these departments. Students have access to this Museum, in connection with their attendance on the classes in Arts in the subjects above named, and also by tickets which can be obtained on application. Students will also have the use of a Technical Museum, occupying the whole of the third storey of the Engineering Building. Amongst other apparatus the Museum contains the Reuleaux collection of kinematic models, presented by W. C. McDonald, Esq., and pronounced by Professor Reuleaux to be the finest and most complete collection in America.

ARCHITECTURAL EQUIPMENT.—The Architectural Department has been endowed by Mr. McDonald, the founder, with a very thorough equipment for practical purposes of instruction ; this is at present in course of provision and completion. In the Museum of the Engineering Building is included a large collection of casts both of architectural detail and ornament (fully illustrative of the historical development of the various styles) and of architectural and figure sculpture. The freehand-drawing classes for architectural students are conducted in this portion of the building.

A special architectural department has been added to the Faculty Library for the use of Students, and numerous important works have been added to the University Library. A large collection of architectural photographs is being formed, in addition to diagrams and a very complete series of lantern slides in illustration of the historical courses. Dia-

grams, models and specimens of materials and fittings are also included for use in the courses on Building Construction and Materials, Sanitation, etc.

§ XVI. WORKSHOPS.

The workshops erected on the Thomas Workman Endowment have a floor area of more than 25,000 sq. ft.

The practical instruction in the workshops is designed to give the Student some knowledge of the nature of the materials of construction, to familiarize him with the more important hand and machine tools, and to give him some manual skill in the use of the same. For this purpose, the Student, during a specified number of hours per week, will work in the shops under the superintendence of the Professor of Mechanical Engineering, aided by skilled mechanics. The courses commence with graded exercises, and gradually lead up to the making of joints, members of structures, frames, etc., finally concluding in the iron-working department with the manufacture of tools, parts of machines, and, if possible, with the building of complete machines.

The equipment includes the following :

In the Carpenter, Wood-Turning and Pattern-Making Departments.—Carpenters and pattern-makers' benches, wood-lathes, a large pattern-maker's lathe, circular-saw benches, jig and band saws, buzz-planer, wood-borer, universal wood-worker, etc.

In the Machine Shop.—The most improved engine lathes, a 36-in. modern upright drill, with compound table, universal milling machine, with vertical milling attachment, hand lathes, planer, universal grinding machine, universal cutter and reamer grinder, buffing machine, a 16-in. patent shaper, vise-benches, etc.

In the Smith Shop.—Forges, hand drill, and a power hammer.

In the Foundry.—A cupola for melting iron, core oven, brass furnace, moulders' benches, etc.

The machinery in the shops is driven by a 50 I. H. P. compound engine and a 10 I. H. P. high speed engine.

In the workshops, a 40 H. P. air compressor has formed the staple object upon which energy has been spent. This, it is hoped, will be completed and added to the Thermodynamic Laboratory during the present year. A large boring bar, with automatic feed and double heads, an Emery brass buffing machine, an overhead travelling crane of one ton capacity, with two transverse motions, in the foundry; and two electric arc lamps and projecting lanterns complete for class demonstration, have been the principal results of steady application in the workshops.

Boarding Houses, etc.

Good board and lodging may be obtained at $18 per month; or separately, board at $12 to $14, and rooms $5 to $10 per month. The cost of drawing instruments for the whole course may be placed at from $15 to $30. Gown and overalls, $7 to $10. Books per session $10 to $30.

Estimated necessary cost per session of 7½ months, including fees, but exclusive of clothing and travelling expenses, $270 to $320.

Students can obtain a list of Boarding Houses on application to the Secretary.

The Applied Science Graduates' Society.

This Society has been recently established with a view to promote a closer relationship between the Faculty and the Graduates, and also between the Graduates themselves. The Society has issued a number of important bulletins relating to the work in the different departments, and giving an account of the development of the Faculty. The membership already includes more than one-third of the whole number of Graduates, and it is hoped that before long all of the Graduates will have joined the Society.

All information respecting the objects of the Society may be obtained on application to the Secretary.

Honorary President, Dr. H. T. Bovey.
President, T. W. Lesage,
Vice-President, M. L. R. S. Lea, Ma.E., Asst. Professor.
Sec.-Treasurer, C. B. Smith, Ma.E., Assist. Professor.

Resident Committee :—E. S. M. Lovelace, Walter C. Adams, R. F. Ogilvy, S. F. Rutherford, R. H. Jamieson.

Non-Resident Committee :—H. K. Wicksteed, Cobourg ; Geo. A. Walkem, Toronto ; Jas S. Costigan, Black Lake ; G. S. Dobson, Kingston, Kent Co. ; H. E. Huestis, Halifax ; W. J. Bulman, Charlottetown ; D. A. Stewart, Winnipeg ; R. E. Palmer, Vancouver; C. H. McNutt, Leadville ; J. P. Ball, Lemont, Ill ; G. H. Frost, New York City ; R. O.King, Harvard, Cambridge, Mass.

THE McGILL MINING SOCIETY.

This Society was organized in 1891-2, by the Undergraduates of the Mining Department, but its scope has since been enlarged and now any Graduate or Undergraduate interested in Mining and Allied work is eligible for membership. Meetings are held fortnightly for reading and discussion of papers in subjects of interest to the Society and frequent lectures are given by outside professional men.

The primary object of the Society is of course to give the Undergraduates an opportunity to meet one another and to become acquainted with the older members of the Society, but an almost equal part of its work consists in keeping the graduates of the department in touch with the work of the University.

The officers for the year 1897-8 are :—

Honorary President, Dr. B. J. Harrington.
President, Percy Butler, Sc., 98.
Vice-President, Angus W. Davis, Sc., 98.
Sec.-Treasurer, S. F. Kirkpatrick, Sc., 99.

The Committee consists of the officers and of two members from each year who are elected at the beginning of the Session.

SPECIAL NOTICE.

In 1897 and subsequently, all Students in the Architectural, Civil and Mining Engineering Courses, entering the Second and Third Years will be required to be in attendance at the University, on the 1st of September, when the Field-work in Surveying will commence, (See page 107.)

FACULTY OF APPLIED SCIENCE—TIME TABLE.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
First Year.	9	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Shopwork.
	10	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Do
	11	Desc. Mechanics.				English.	Do
	12	Chemistry.		Drawing.	Drawing.	Chemistry.	Do
	2 to 5	Geom. Drawing.	Shopwork.	Geom. Drawing(*a*). Mathematical Lab. (*b*).	Freehand Drawing.	Pract. Chemistry.	
Second Year.	9	Mathematics.	Mathematics.	Building Const., 1, 2, 3, 4, 5.	Mathematics.	Mining, (*a*). Metallurgy, (*b*). Drawing, 1.	Shopwork, 1 5. Drawing, 1.,
	10	Physical Laboratory, 2, 5, 6. Freehand Drawing, 1.	Drawing, 1.	Mathematics.	Chemistry, 6. Kinematics, 3, 4. Surveying, 1, 2, 5.	Drawing, 1.	Do
	11	Do	Architecture, 1, 2. Zoology, 5.	Botany, 6. Mathematics.	Architecture, 1, 2. Kinematics, 3, 4. Zoology, 5.	Mathematics.	Do
	12	Do Botany, 6.	Exp. Physics, 1, 2, 3, 4, 5. Chemistry, 6.	Surveying, 1, 2, 5. Kinematics, 3, 4.	Experimental Physics.	Chemistry, 5, 6. Elem. Archit., 1.	Do
	2 to 5	*Chemistry, 5, 6. Mapping, 1, 2. Shopwork, 3, 4.	(*c*) Desc. Geometry, 1, 2, 3, 4, 5, 6.	* Chemistry, 5, 6 . Mechl. Drawing, 3, 4. Shopwork, 1, 2.	Chemistry, 6. Drawing, 1. Mapping, 2, 5. Shopwork, 3, 4.	Physical Laboratory, 3, 4. Drawing, 5.	

1. Architectural Students. 2. Civil Engineering Students. 3. Electrical Engineering Students. 4. Mechanical Engineering Students. 5. Mining Engineering Students. 6. Practical Chemistry. *The Chemical Laboratories are open to Second, Third and Fourth Year classes daily (Saturday excepted) from 9 a.m. to 5 p.m.

Field work during September and October, 2 to 5 p.m. For 2nd Year *Architectural and Civil*, on Mondays, Tuesdays, Wednesdays, Thursdays and Fridays. For *Mining*, on Mondays, Tuesdays, Thursdays and Fridays. For 3rd year *Architectural, Civil* and *Mining* on Mondays, Thursdays and Fridays. For 4th year, *Civils* on Saturday mornings and two first clear evenings of each week.

(*a*) First Term. (*b*) Second Term. (*c*) After Nov. 1st.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
THIRD YEAR.	9	Experimental Physics, 1, 2, 3, 4, 5, 6.	Elect. Eng. 3. Mineralogy, 5, 6.	Dyn. of Mach., 3, 4. Geology, 2, 5, 6.	Experimental Physics. 1, 2, 3, 4, 5, 6.	Mach. Design (*b*), 4. Mathematics(*a*, 1, 2, 3, 4, 5. Mineralogy (*b*), 5, 6.	Electrical Eng. Lab. (*a*), 3. Geology (*c*), 5. Math. Lab. (*d*), 5. Testing Lab. (*b*), 1, 2, 3, 4, 5.
	10	Dyn. of Mach., 3, 4. Geology, 2, 5, 6.	*Surveying, 1, 2, 5.	Desc. Geom., 1, 2. Metallurgy, 5, 6. Shopwork, 3, 4.	Chemistry, 6. Machine Design, 3, 4. Railroad Eng., 2, 5.	Geology, 2, 5, 6. Mach. Design, 4.	Do
	11	Mathematics, 1, 2, 3, 4, 5.	Theory of Structures, 1, 2, 3, 4, 5. Zoology, 6.	Metallurgy, 5, 6. Municipal Eng., 1, 2. Shopwork, 3, 4.	Mathematics, 1, 2, 3, 4, 5. Zoology, 6.	Graphics (*a*), 1, 2, 3, 4, 5. Metallurgy (*b*), 5, 6.	Do
	12	Machine Design, 3, 4. *Surveying, 1, 2, 5.	Theory of Structures, 1, 2, 3, 4, 5.	Shopwork, 3, 4. Surveying, 1, 2, 5.	Theory of Structures, 1, 2, 3, 4, 5.	Graphics (*a*), 1, 2, 3, 4, 5. Mathematics (*b*), 1, 2, 3, 4, 5.	Do
	2 to 5	Chemistry, 6. Drawing, 4. Mapping, 1, 2. Physical Lab., 3, 5.	Chemistry, 6. Drawing, 1, 2. Elect. Lab., 3. Metallur. Lab., 5.	Chemistry, 5, 6. Physical Lab., 1, 2, 3, 4.	Det. Mineralogy, 5, 6. Drawing, 1, 3, 4. Mapping, 2.	Chemistry, 5, 6. Desc. Geo. (*d*), 1, 2. Graphics (*b*), 1, 2. Shopwork, 3, 4.	
FOURTH YEAR.	9	Thermodynamics, 2, 3, 4, 5.	Dyn. of Mach., 3, 4. Mining, 5.	Designing, 1, 2, 4. 5. Electrodynamics, 3. Geology, 6. Museum Work.	Thermodynamics, 2, 3, 4, 5.	Designing, 5. Electrodynamics, 3. Hyd. Machinery, 4. Municipal Eng., 1, 2.	Mining Lab. 5. Electrical Eng. Lab., 3. Geodetic Lab., 2. Shopwork, 4. Designing, 1.
	10	Hydraulics, 1, 2, 3, 4, 5.	Mechanical Lab., 4. Mineralogy, 5, 6. Physical Lab., 3.	Designing, 1, 2, 4, 5. Electrical Eng. Lab., 3. Mining, 5. Mech. Eng. 4 (*b*),	Hydraulics, 1, 2, 3, 4, 5.	Designing, 5. Elect. Eng. Lab., 3. *Geodesy, 2. Thermo. Lab., 4.	Do
	11	*Geodesy, 2. Geology, 5.	Designing, 5. Mechanical Lab., 4. Physical Lab., 3. Theory of Structures, 1, 2.	Designing, 1, 2, 4. Electrical Eng. Lab., 3. Mineralogy, 5, 6.	Dyn. of Mach., 3, 4. Railroad Eng., 2, 5.	Elect. Eng. Lab., 3. Geology, 5. Theory of Structures, 1, 2. Thermo. Lab.	Do
	12	Hydraulic Machinery, 1, 2, 3, 5. Machine Design, 3(*a*), 4.	Designing, 5. Mech. Lab., 4. Physical Lab., 3.	Designing, 4. Electrical Eng. Lab., 3. Mineralogy, 5, 6. Municipal Eng., 1, 2.	Desc. Elect. Eng. 1, 2, 3, 4, 5.	Designing (*b*), 5. Elect. Eng. Lab., 3. Geology (*a*), 5. Theory of Struct., 1, 2. Thermo. Lab., 4.	Do
	2 to 5	Assaying, 5. Chemistry, 6. Designing, 1, 2, 3, 4.	Chemistry, 6. Mech. Lab. 4. Mining Lab. (*b*), 5. Petrog. Lab. (*a*), 5. Physical Lab., 3. Testing Lab., 1, 2, 5.	Assaying, 5. Chemistry, 6. Electrical Eng. Lab., 3. Hydraulic Lab., (*b*) 1, 2, 4.	Assaying, 5. Cement Lab., 1, 2. Chemistry, 6. Designing, 4. Physical Lab., 3. Testing Lab., 1, 2.	Assaying—Chemistry, 6. Designing (*a*), 5. Graphics, 1, 2. Hyd. Lab. (*b*), 3, 5. Thermo. Lab., 4.	

(*a*) First Term. (*b*) Second Term. (*c*) First half of first Term. (*d*) Second half of first Term. * For field work see foot note page 146. 1. Architectural Students. 2. Civil Engineering Students. 3. Electrical Engineering Students. 4. Mechanical Engineering Students. 5. Mining Engineering Students. 6. Practical Chemistry Students.

Faculty of Medicine.

THE PRINCIPAL (*ex-officio*)

Professors.

WRIGHT,	STEWART,	ADAMI,
MACCALLUM,	WILKINS,	BIRKETT,
CRAIK,	PENHALLOW,	ALLOWAY,
GIRDWOOD,	MILLS,	FINLEY,
RODDICK,	CAMERON,	LAFLEUR,
GARDNER,	BLACKADER,	ARMSTRONG,
SHEPHERD,	RUTTAN,	JOHNSTON.
BULLER,	BELL,	

Dean.—R. CRAIK, M.D., LL.D.
Registrar.—R. F. RUTTAN, B.A., M.D., F.R.S.Can.
Librarian.—F. G. FINLEY, B.A., M.D.
Director of Museum.—J. G. ADAMI, M.A., M.D.

The sixty-fifth Session of this Faculty will be opened on Tuesday, September 21st, 1897, by an introductory lecture at 3 p.m. The regular lectures in all subjects will begin on September 22nd, at the hours specified in the time-table, and will be continued until May 27th, 1898.

The Medical School of McGill University was founded in 1822 as the "Montreal Medical Institution," by Drs. W. Robertson, W. Caldwell, A. F. Holmes, J. Stephenson and H. P. Loedel—all of them at the time members of the staff of the Montreal General Hospital.

Although founded in 1822, yet no session of the "Medical Institution" was held until 1824, when it opened with 25 students; in 1844 the number of students in the Faculty was 50; in 1851, 64, with 15 graduates; in 1872-73, 154, with 35 graduates; in 1892-93, 315, with 46 graduates; in 1894-95, 403, with 54 graduates ; in 1895-96, 419, with 90 graduates.

There were no sessions held during the political troubles

from 1836 to 1839, and it is owing to this fact that the present is the 65th session of the Faculty. This is in reality the 68th session of the school, which is the direct continuation of the "Montreal Medical Institution."

In 1828, the "Medical Institution" was recognized by the Governors of the Royal Institution as the Medical Faculty of McGill University. At this time the lectures were given in a building on the site of the present Bank of Montreal. Later, the school was removed to a brick building still standing near the corner of Craig and St. George streets.

In 1846, the lectures of the Faculty were given in the present central building of the University, now occupied by the Faculty of Arts. On account of the inconvenience arising from the distance of the University buildings from the centre of the city, it was decided in 1850 to erect a Medical school building on Cote Street, provided with ample accommodation for Library and Museum, and furnished with a large dissecting-room and two lecture rooms; this building was occupied for the first time during the session 1851-52, and sufficed for the wants of the Faculty until 1872-73, when the present main building was provided by the Governors of the University.

In 1885, the building in the University grounds, erected by the Governors for the use of this Faculty, was found inadequate. A new building was then added, which, at the time, afforded ample facilities for carrying out the great aim of the Faculty,—that of making the teaching of the primary branches thoroughly practical.

Owing to the larger classes and the necessity of thorough laboratory teaching, the Lecture Rooms and the Laboratories, added in 1885, soon became insufficient in size and equipment to meet the requirements of the Faculty.

The late Mr. John H. R. Molson, with timely generosity, came to the aid of the Faculty, and in 1893 purchased property adjoining the college grounds, and enabled the Faculty to erect new buildings, and extensively alter and improve those already in use.

These buildings were completed and officially opened by His Excellency, the Earl of Aberdeen, visitor of the University, January 8th, 1895.

As will be seen on reference to the architect's plans in the special calendar of the Medical Faculty, the new buildings have been erected as an extension of the old ones, towards the north-west, partially facing Carlton road, and convenient to the Royal Victoria Hospital. They connect the Pathological building acquired in 1893 with the older buildings, and comprise a large modern lecture room, capable of accommodating 450 students, with adjoining preparation-rooms and new suites of laboratories for Pathology, Physiology, Histology, Pharmacology and Sanitary Science. The laboratories, etc., in the older buildings, have been greatly enlarged and improved; the whole of the second floor has been devoted to the department of anatomy, and consists of dissecting-room, anatomical museum and bone-room, preparation rooms, Professors' and Demonstrators rooms, and a special Lecture Room.

On the ground floor the Library and Museum have been greatly enlarged; a room forming part of the Library has been furnished as a reading room for the use of students, where the extensive reference library of the Faculty may be consulted.

On this floor are situated also the Faculty room, the Registrar's office, the special museum for Obstetrics and Gynaecology, together with Professors' rooms, etc. The chemical laboratories have been increased by including the laboratories formerly used by the department of Physiology.

In the basement are placed the janitor's apartments, cloak rooms with numerous large lockers, the lavatory, etc., recently furnished with the most modern sanitary fittings.

Through the great liberality of the Honorable Sir Donald A. Smith in founding the "Leanchoil Endowment," and of the citizens of Montreal and Medical Graduates in subscribing to the "Campbell Memorial Fund," the Faculty has been enabled to conduct and maintain the teaching of the different branches in a high state of efficiency.

The Faculty is glad to be able to announce that, by the liberality of the Honorable Sir Donald A. Smith in endowing the chairs of Pathology and Sanitary Science with one hundred thousand dollars, it is able to establish these departments on a footing fully commensurate with their importance and with the advances and requirements of modern medical science.

(The attention of Practitioners is called to the Post Graduate and advanced courses established in 1896 in the hospitals and laboratories connected with the Faculty of Medicine. (See page 177.)

Lecture Rooms.

In the buildings now occupied by the Faculty, as will be seen by reference to the diagrams, in addition to the laboratories, dissecting-room, etc., there are three large lecture rooms, two capable of comfortably seating about 300 students, and one for general lectures, examinations, etc., capable of seating 450 students. These theatres are well ventilated and lighted by electricity, as indeed is the entire building. The seats are numbered, and a lecture room ticket securing a seat for the session is given each student on enregistering and paying the sessional fee.

Rooms for Students Use.

Three cloak rooms are provided in convenient portions of the building ; and in addition commodious lockers can be procured provided with special locks at a nominal rental. A large, well lighted reading-room containing newspapers, magazines and the current medical journals, is provided in the new block, and is managed by the students themselves. The original library has been refitted as a comfortable, well-lighted reading-room for students desiring to avail themselves of the reference works in the library of the Faculty.

Dissecting Room.

The Dissecting Room, which is situated on the second floor, is L shaped, one arm of which is 76 feet in length and 31 ft. in breadth, and the other arm 45 ft. by 32 ft. It is supplied

with thirty dissecting tables and over 200 specially constructed lockers, and is well lighted for work during the day and night. In procuring appliances for the comfort and convenience of the students, no reasonable expense has been spared.

In connection with the Dissecting room, there is a Bone room and Anatomical Museum where students have an excellent opportunity of studying osteology, frozen sections, anatomical models and dry preparations. In connection with the Bone room is a small but well arranged museum of comparative osteology. There are also rooms for demonstrators of anatomy.

Physiological Laboratories.

The new Physiological Laboratories, which are situated on the upper floor of the new building, are supplied with the most modern apparatus for the practical teaching of this most important branch of the medical curriculum. They consist of one large room forty-five by thirty-five feet for undergraduate work, and two smaller ones for more advanced work and private research. In addition there is a room set apart for a consulting library and for the special use of the Professor of this department. The Students' Laboratory is arranged in such a way as to permit of students assisting at and taking part in demonstrations.

Histological Laboratories.

The Histological Laboratory proper, is a large, well-lighted room on the second floor of the new building. It is so arranged that over eighty students can be present at the microscopical demonstrations. It is supplied with 50 microscopes. From the large number of microscopes employed, students will have special facilities in studying and making themselves thoroughly acquainted with the specimens that are the subjects of demonstration. In addition to the students' laboratory there is a smaller laboratory adjoining for the use of the professor and demonstrators and for special work.

Pharmacological Laboratory.

The Pharmacological Laboratory is a large room 45 by 35 feet, situated on the second floor of the new building, and is now furnished with the necessary appliances for the practical teaching of pharmacology. In this room is placed a teaching museum of drugs and pharmaceutical preparations, arranged according to their physiological action.

Chemical Laboratory.

The Chemical Laboratory is large, lofty, and well-lighted from three sides. It can accommodate comfortably 124 men, but only a much smaller number are allowed to work at one time. Each student, when entering on this course, has a numbered table in the laboratory assigned to him for his use during the session. Each table has its own gas and water fixtures, and is provided with shelves for its corresponding set of reagent-bottles, as well as a drawer and locker containing a modern set of chemical apparatus especially adapted for the work. This apparatus is provided by the Faculty, and supplied to each student without extra charge. The student is only required to pay for apparatus broken or destroyed.

The laboratory is ventilated by an electric fan and fully equipped for the various courses of study, thus giving to the student unsurpassed advantages for acquiring a sound and practical knowledge of medical chemistry.

Pathological Laboratories.

A large building of three stories, 47 by 40 feet, adjoining the College, recently acquired by the Faculty, thanks to the generosity of the late Mr. J. H. R. Molson, constitutes the Pathological Laboratory; it has undergone extensive alterations to fit it for the purpose. The uppermost floor has been converted into a work-room for the osteologist and curator; the second floor is one large laboratory for classwork in Practical Pathology and Bacteriology; upon the floor beneath are two laboratories for research, a preparation room, professor's private room and library, and culture rooms; while upon the ground floor are rooms for the attendant, for storage and for keeping animals.

I.

MATRICULATION.

I. Regulations of the Faculty of Medicine of McGill University.

Every Student, before he can be enregistered as an undergraduate in Medicine, must present a certificate of having passed the Matriculation Examination of the Faculty of Medicine or Arts of this University, or of having passed some State or University examination accepted by this University.

Graduates in Arts of any recognized University, and those who have passed the Entrance Examination of a Provincial Medical Council, and thus become enregistered students in medicine of a province in Canada, are exempt from further preliminary examination.

Students from the United States who have passed a State or University examination fully equivalent to that required by this University, may at the discretion of the Faculty be admitted to study without further examination.

The Matriculation Examination of this University for Medicine is held twice each year, in June and September, at the same time as that for Arts and Science. The fee for this examination is five dollars, payable on application to the Secretary of the University, W. Vaughan.

Papers for the June examinations will be sent to local centres on application to the Acting Secretary. An additional fee of four dollars, to meet local expenses, will be charged for such examination.

The September examinations are held just before the lectures in Medicine begin. These are held in McGill College, Montreal, only, and at these examinations alternative books in Classics will be accepted.

The subjects for examination are Classics, Mathematics and English, and one of the optional subjects as below.

Compulsory Subjects:—

Examinations begin on May 30th in McGill College and local centres, on September 15th in McGill College only.

Latin.—Caesar, Bell. Gall. Books I. and II.; Virgil, Aeneid, Book I., and Latin Grammar.

In both Greek (when taken as an optional subject) and Latin, translation at sight and prose composition (sentences or easy narrative, based upon the prescribed prose text), will be required.

At the September, but not at the June, examination, other works in Greek and Latin equivalent to those specified, may be accepted, if application be made to the Professors of Classics at least a fortnight before the day of examination.

Mathematics.—Arithmetic, Elementary rules, Vulgar and Decimal Fractions, Proportion, Percentage, Simple Interest, etc., Square root, and a knowledge of the Metric System; Algebra, Elementary rules, Fractions, Factors, Equations of the First Degree, Indices, Surds and easy Quadratics; Problems leading to equations; Euclid's Elements, Books I., II., III., with easy deductions.

English.—Writing from Dictation. Grammar—A paper on English Grammar, including Analysis. The candidate will be expected to show a good knowledge of accidence, as treated in any grammar prepared for the higher forms of schools. A similar statement applies to *grammatical* Analysis, in which the nomenclature used by Mason will be preferred. The complete English Grammar published in Sonnenschein's Parallel Grammar Series may be regarded as giving the minimum amount of information expected. English History—Candidates will be required to give the chief details of leading events. While any text-book written for the upper forms of schools may be used in preparation for the examination, Gardiner's Outline of English History (Longman's) is recommended. Composition—Candidates will write a short essay on a subject given at the time of examination. Shakspere's Richard II., ed. Deighton (Macmillan), and Scott's Lady of the Lake, ed. Stuart (Macmillan).

Optional Subjects :—

(*One only of these subjects is required.*)

1. *French.*—Grammar up to the beginning of Syntax. An easy translation from French into English, and from English into French; Dictation or similar exercise. Candidates are expected to be able to write French without gross mistakes in spelling or grammar; special credit will be given for evidence of familiarity with the spoken language.

2. *German.*—The first eighty pages of Joynes' German reader (or equivalent amount), together with German accidence and translation into German, as in the First Part of Vandersmissen's German Grammar (or equivalent amount).

3. *Greek.*—Xenophon, Anabasis, Book I.; Greek Grammar.
4.—*Chemistry.*—(As in Remsen's Elements of Chemistry, pages 1.160) *and Physics* (Gage and Fessenden's High School Physics).

Candidates who at the examination for Associate in Arts have passed in the above subjects are admitted as Undergraduates.

Candidates who fail in one or more subjects at the June examination, or who have taken part only of the examination, and present themselves again on the following September, will be exempted from examination in those subjects only in which the Examiners may have reported them as specially qualified.

Ontario Candidates.—At the June examination, candidates from Ontario may present an equivalent amount from the books prescribed for the Junior Matriculation Examination of the University of Toronto.

Junior Leaving Examination accepted by the Universities of Ontario is accepted by the Faculty of Arts for those who purpose taking the double course of Arts and Medicine, in so far as the subjects of their programme satisfy the Examiners of the Faculty, *i.e.*, when the subjects taken are the same as, or equivalent to, those required in McGill University.

A. *Matriculation Examination for those who wish to obtain a license to practice in England, India, or any other British Possession (Canada excepted).*

The Matriculation Examination in Medicine of this University, as described above, is accepted by the General Medical Council of Great Britain and Ireland. Graduates of this University desiring to enregister in England are thus exempted from any examination in preliminary education on production of the McGill Matriculation certificate together with a certificate that all the subjects of this Examination were passed at one time. Certificates of this University for attendance on lectures are also accepted by the General Medical Council.

B. *Matriculation Examination for those who wish to obtain a licence to practice in the Province of Quebec.*

No University Matriculation Examination is accepted by the College of Physicians and Surgeons of this Province. Graduates in Arts of any British or Canadian University are, however, exempted from examination on presentation of their Diplomas.

Those who pass the Preliminary Examination described below, or Graduates in Arts who enregister as students in the C. P. & S., Quebec, on beginning their studies in Medicine, obtain on graduating from McGill University, a license to Practice in Quebec without further examination in any professional subject.

The requirements for this examination are:

Latin.—Caesar's Commentaries, Bks. I., II., III., IV. and V. —Virgil's Aeneid, Bks. I. and II.—The odes of Horace, Bk. I., with a sound knowledge of the Grammar of the Language.

English.—For *English-speaking* candidates.—A critical knowledge of one of Shakespeare's plays, viz., Twelfth Night, for 1897, with English Grammar, as in Dr. Smith or Mason.

For *French-speaking* candidates.—Translation into French of passages from the first eight Books of Washington Irving's Life of Columbus, with questions of Grammar. Translation into English of extracts from Fenelon's Telemaque.

French.—For *French-speaking* candidates.—A critical knowledge of Moliere's Le Bourgeois Gentilhomme, Fenelon's Aventures de Telemaque and La Fontaine's Fables, Books I., II., III., with questions of Grammar and Analysis.

For *English-speaking* candidates.—Translation into English of passages from Fenelon's Telemaque, with questions of Grammar. Translations into French of easy English extracts.

Belles Lettres and Rhetoric.—Principles of the subject as in Haven's Rhetoric, or Boyd's Rhetoric and Literary Criticism. History of the Literature of the age of Pericles in Greece, of Augustus in Rome, and of the 17th and 18th centuries of England and France.

History.—Outlines of the History of Greece and Rome, with particular knowledge of the History of Britain, France and Canada.

Geography.—A general view, with particular knowledge of Britain, France and North America.

Arithmetic.—Must include Vulgar and Decimal Fractions, Simple and Compound Proportion, Interest and Percentages, and Square Root.

Algebra.—Must include Fractions and Simultaneous Equations of the First Degree.

Geometry.—Euclid, Books I., II., III. and VI., or the portion of plane Geometry covered by those Books. Also the measurement of the lines, surfaces and volumes, of regular geometrical figures.

Chemistry.—Outlines of the subject as in Wurtz' or Roscoe's Elements of Chemistry.

Botany.—Outlines as in Gray's "How Plants Grow."

Physics.—Outlines as in Peck-Ganot's Physics.

Philosophy.—Elements of Logic as in Jevon's Logic; Elements of Philosophy, as in Professor Murray's Handbook.

The Examinations will be held in September, 1897, at Quebec, and in June, 1898, at Montreal. (See Almanac in the special Calendar of Faculty of Medicine for exact date of examinations). Applications to be made to Dr. A. T. Brosseau, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule giving text books and percentage of marks required to pass in each subject.

Examination Fee, 20 dollars. Should the candidate be unsuccessful, one half of the fee will be returned.

Of the four years' study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the fourth year.

C. *To obtain a license to Practice in Ontario.*

Every one desirous of being registered as a matriculated medical student in the register of this College, except as hereinafter provided, must present to the Registrar the official certificate of having passed the "Departmental Pass Arts Matriculation Examination," and in addition Physics and Chemistry—whereupon he shall be entitled to be so registered upon the payment of twenty dollars and giving proof of his identity.

Graduates in Arts, in any University in Her Majesty's dominions, are not required to pass this examination, but may register their names with the Registrar of the College, upon giving satisfactory evidence of their qualifications, and upon paying the fee of $20.

A certificate from the Registrar of any chartered University conducting a full Arts course in Canada, that the holder thereof matriculated prior to his enrolment in such University, and passed the examination in Arts prescribed for students at the end of the first year, shall entitle such student to registration as medical student under *The Ontario Medical Act.*

Every medical student, after matriculating, shall be registered in the manner prescribed by the Council, and this shall be held to be the beginning of his medical studies, which shall date from that registration.

Full details may be obtained by application to Dr. R. A. Pyne, Registrar, cor. Bay and Richmond Sts., Toronto.

D. *To practice in the Maritime Provinces.*

The examination required by the Faculty of Medicine of this University is accepted in the provinces of Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland, subject to the following conditions :

The Nova Scotia Medical Board requires that 60 per cent. of the required marks be taken, and that Physics be taken as the optional subject.

The New Brunswick Medical Board accepts the McGill Matriculation, as it is the same as that required for entrance to the Faculty of Arts.

The Prince Edward Island Medical Board has requirements identical with those of New Brunswick.

The Newfoundland Medical Board accepts the McGill Matriculation, as it is identical with the Arts Matriculation, but requires Physics in addition.

Students desiring ultimately to practice in any of these provinces should, when enregistered in the Faculty of Medicine, notify the Registrar of that province of the fact, and have their matriculation enregistered.

The Registrars are : For Nova Scotia, Dr. A. H. W. Lindsay, Halifax ; for Newfoundland, Dr. J. Sinclair Tait, St. Johns'; and for New Brunswick, Dr. G. H. Coburn, Fredericton, who will furnish all details of requirements, etc.

Special matriculation examinations are held annually in New Brunswick and Nova Scotia, at dates stated in the Almanac at the beginning of the special Calendar of the Faculty of Medicine.

These examinations, as stated above, are accepted by this University as equivalent to its Matriculation Examination.

E. *To obtain license to practice in Manitoba.*

An examination accepted by the University of Manitoba as equivalent to their matriculation is required on entrance, and to obtain License an examination in Professional subjects is required.

F. *To obtain license to practice in North-West Territories.*

No special matriculation standard is specified. Licensed practitioners of any of the other provinces are admitted to practice without examination.

Those not licensed elsewhere are examined in professional subjects only.

G. *To practice in British Columbia.*

No special standard of matriculation is specified.

All desiring a license must be graduates of some recognized medical school, and pass an examination in professional subjects only.

II.

ENREGISTRATION.

The following are the University Regulations :

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty.

The said Register shall be closed on the 17th of October next for the Session of 1897-98.

Fees are payable to the Registrar, and must be paid in advance at the time of enregistration.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and Licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemptions in certain subjects as are granted to all colonial degrees.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of " Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec, provided the graduate from this university matriculated before the College of Physicians and Surgeons of Quebec, when entering on the study of medicine.

Any graduate therefore in medicine of the University may obtain a license to practise in the Province of Quebec without further examination, if he has complied with the above regulations.

TIME TABLE FOR SESSION 1896-97.

Time Tables for the Session of 1897-98 will be issued to each student with his Lecture Room ticket on enregistration.

TIME TABLE OF FIRST YEAR LECTURES.

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Anatomy	9	9	9	9	9	.....	Autumn & Winter terms—No. I.
Physiology	4	4	.....	4	.....	.....	No. I.
Chemistry	.....	3	.....	3	3	.....	Autumn Term—No. III.
	.....	.....	2	.....	2	.....	Winter & Spring terms—No. III.
Zoology	.....	11	.....	11	.....	10	Autumn & Winter Terms.
Botany	.....	11	.....	11	.....	.....	Spring Term.
LABORATORY WORK.							
Prac. Anatomy	10–12½	10–12½	10–12½	10–12½	10–12½	9–12½	
*Prac. Physiology	.....	.....	3–5	.....	.....	.....	
*Prac. Histology	2–4	.....	.....	.....	4–6	10–12	
*Prac. Chemistry	9–11	9–11	9–11	9–11	.....	.....	Winter Term.
*Prac. Botany	11–12	.....	11–12	.....	10–12	.....	Spring Term.

* Class taken in divisions.

TIME TABLE OF SECOND YEAR LECTURES.

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Anatomy	9	9	9	9	9	.....	Autumn & Winter Terms—No. I.
Physiology	2	.....	2	.....	2	.....	No. I.
Chemistry	3	.....	3	.....	3	.....	
Pharmacology and Therapeutics	4	.....	4	.....	4	.....	No. I.
LABORATORY WORK.							
Anatomy	10	10	10	10	10	10	Autumn and Winter Terms.
	12.30	12.30	12.30	12.30	12.30	12.30	
† Prac. Chemistry	9–11	9–11	9–11	9–11	9–11	9–11	Spring Term.
† Prac. Physiology	.....	2–4	.....	2–4	.....	.....	

† Half the class only.

NOTE.—Students of the second year when not engaged in the laboratories are required to attend the Out Patients Clinics (only) of M. G. H. or R. V. H. (11. a.m. to 1 p m.); attendance to average two hours per week. Certificates required for graduation.

TIME TABLE OF THIRD YEAR LECTURES.

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Gynæcology and Obstetrics	.....	9	.....	9	.....	.....	II.
Medicine	.....	10	*11–12	10	.....	.....	III.
Surgery	10	.....	*12–1	.....	10	.....	III.
Jurisprudence and Mental Diseases	11	.....	.....	11	.....	.....	II.
Pharmacology and Therapeutics	11	11	.....	.....	11	.....	III.
General Pathology and Bacteriology	5	.....	9	.....	.....	.....	III.
Hygiene	9	.....	.....	.....	9	.....	III.
Morbid Anatomy	.....	.....	.....	.....	.....	*9–11	
Clinical Medicine	.....	1 p.m. M.G.H.	.....	2 p.m. R.V.H.	.....	.....	
Clinical Surgery	2 p.m. R.V.H.	.....	.....	.....	1 p.m. M.G.H.	.....	
†Prac. Pathology	.....	4–6	4–6	4–6	4–6	.....	Path Lab. Autumn and Winter.
‡Clinical and Sanitary Chemistry	.....	4–6	4–6	4–6	4–6	.....	Chem. Lab. Autumn
‡Bacteriology and Hygiene	.....	4–6	4–6	4–6	4–6	...	Path. Lab. Autumn
††Clin. Microscopy	.....	4–6	4–6	4–6	4–6	.....	Path. Lab. Spring
‡†Operative Surgery	.....	4–6	4–6	4–6	4–6	.....	Anat. Lab. Spring

*Alternate weeks M.G.H. and R.V.H. † Optional. ‡ Class taken in groups.

TIME TABLE OF FOURTH YEAR LECTURES.

LECTURES.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Lecture Theatre.
Gynæcology	.....	9	.....	.....	.....	.....	II.
Obstetrics	.....	.....	9	.....	11	.....	II.
Medicine	.....	10	‡11–12	10	.....	.....	III.
Surgery	10	.....	‡12–1	.....	10	.....	III.
Medical and Surg. Pathology	.....	.....	.....	9	.....	.....	III.
Ophthalmology	9	.....	.....	.....	.....	.....	II.
*Out-Patients Clinics	11–12 12–1	11–12 12–1	11–12 12–1	11–12 12–1	11–12 12–1	11–12	R.V.H. M.G.H.
Clinical Medicine	1	.....	.....	.....	2	.....	R.V.H. M.G.H.
Clinical Surgery	.....	1	.....	2	.....	.....	M.G.H. R.V.H.
Gynæcological Operations	.....	11	.....	.....	.....	.....	R.V.H.
*Clinical Ophthalmology	4	.....	4	.....	.....	.....	M.G.H. R.V.H.
†Gynæcological Clinics	 11	4	.....	4 4	4	.....	M.G.H. R.V.H.
Morbid Anatomy	.....	.....	.....	.....	.....	‡9–11	
Clinical Obstetrics	.....	.....	.....	.....	.....	1–2.30	Maternity Hospital.
*Dermatological Clinic	.....	.....	2	.....	.....	.....	M.G.H.
Genito-Urinary Clinic	.....	.....	.....	.....	.....	3	R.V.H.
*Diseases of Children Clinic	.....	4	.....	.....	4	.....	M.G.H.
*Laryngology	4	.....	.....	.....	4	.....	M.G.H.

* In groups of eight or ten † In groups of four. ‡Alternate weeks M.G.H. and R.V.H.

III.

COURSES OF LECTURES.

The Corporation of the University, on the recommendation of the Faculty of Medicine, in 1894, consented to the extension of the courses of lectures in medicine over a period of about nine months instead of six.

By this means, (1) The students of the primary years have a more ample opportunity of becoming acquainted, by laboratory work, with those branches of study which form the scientific basis of their profession, and (2) the final students will be able to derive the greatest benefit from the abundance of clinical material provided in the two Hospitals.

By this arrangement, while the actual number of didactic lectures per session will be decreased, there will be a corresponding increase in the amount of tutorial work and individual teaching in the laboratories for Chemistry, Physiology, Anatomy, Pathology and Hygiene, as well as giving more time during the last two years of the course for the thorough study of disease in the wards of the Royal Victoria and Montreal General Hospitals.

The Faculty expects, by thus increasing the time that the different professors, lecturers and demonstrators devote to each student, to accomplish two very important ends : First, to do away with the injurious effects which result from attempting to condense the teaching of medicine and surgery into four or even five sessions of six months : Second, to give each student a sounder and more thoroughly practical knowledge of his profession than could be obtained by attending during even five sessions of six months each.

ANATOMY.

(DESCRIPTIVE AND PRACTICAL).

PROFESSOR, FRANCIS J. SHEPHERD.

LECTURERS, J. M. ELDER and J. A. SPRINGLE.

SENIOR DEMONSTRATOR, J. G. McCARTHY.

DEMONSTRATORS, R. TAIT McKENZIE, W. F. DEFKS, J. A. HENDERSON, and W. I. BRADLEY.

ASSISTANT DEMONSTRATORS, J. J. ROSS and A. E. ORR.

Anatomy is taught in the most practical manner possible, and its relation to Medicine and Surgery fully considered.

The lectures are illustrated by the fresh subject, moist and dry preparations, sections, models and plates, and drawings on the blackboard.

A course of practical demonstrations in Medical, Surgical and Topographical Anatomy is also given in the final year of the course.

The department of *Practical Anatomy* is under the direct control and personal supervision of the Professor of Anatomy, assisted by his staff of Demonstrators. The methods of teaching are similar to those of the best European schools, and Students are thoroughly grounded in this branch. Every Student must be examined *at least* three times in each part dissected, and no certificate is given unless the examinations are satisfactory. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Prizes are awarded at the end of the Session for the best examination on the fresh subject.

The Dissecting Room is open from 8 a.m. to 6 p.m. Abundance of material provided.

CHEMISTRY.

PROFESSOR, GILBERT P. GIRDWOOD.

The course in this subject is carefully graded. Students of the first year receive lectures on Chemical and Physiological Physics and the general principles and theories of the science. In the second year the course on chemistry is extended to embrace its application to physiology and medicine, and includes a course in Organic Chemistry. The lectures are fully illustrated by experiments, for which the department is equipped with all modern Lecture-room apparatus.

PRACTICAL CHEMISTRY.

PROFESSOR, R. F. RUTTAN.

DEMONSTRATOR, C. G. L. WOLF.

LABORATORY ASSISTANT, CHARLES STEVENSON.

Laboratory instruction in practical chemistry is given during each of the first three years of study throughout one term.

The first year's course illustrates the general principles of chemical action and the properties of typical elements. During the second year the course will include methods of qualitative analysis and the detection of poisons. In the third year a course of clinical and sanitary chemistry will be given, in

which the student will be made familiar with the application of chemistry to the diagnosis and prevention of disease. Special attention is directed to instructing the student in making accurate notes of his experiments and his conclusions. These notes are examined daily and criticised.

PHYSIOLOGY.

PROFESSOR, WESLEY MILLS.

LECTURER, W. S. MORROW.

DEMONSTRATOR, J. W. SCANE.

The purpose of this Course is to make Students thoroughly acquainted, as far as time permits, with modern Physiology: its methods, its deductions, and the basis on which the latter rest. Accordingly a full course of lectures is given, in which the physical, the chemical and other aspects of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subject is experimentally illustrated. The experiments are mostly free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the Student.

Laboratory work for Senior Students :—

(1.) During a part of the Session there will be a course on Physiological Chemistry, in which the Student will, under direction, investigate food stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2.) The remainder of the Session will be devoted to the performance of experiments which are unsuitable for demonstration to a large class in the lecture room, or that require the use of elaborate methods, apparatus, etc., together with such as each individual of the class can himself conduct.

Laboratory work for Junior Students :

This will be somewhat similar to the course for senior students, but simpler and anatomico-physiological rather than chemical ; like the work for second year students its main object will be the illustration of important physiological principles.

HISTOLOGY.

PROFESSOR, GEO. WILKINS.

DEMONSTRATOR, N. D. GUNN.

This will consist of a course of lectures and demonstrations with the Microscope, besides a short course in the preparation and mounting of specimens. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

PHARMACOLOGY AND THERAPEUTICS.

PROFESSOR, A. D. BLACKADER.

ASSISTANT DEMONSTRATORS, { F. M. FRY. / R. A. KERRY.

The lectures on this subject are graded in the following manner :

During the primary course, attention is directed chiefly to Pharmacology, including the important chemical and physical properties of the various drugs, and a brief consideration of their physiological action ; therapeutics is considered only in outline. A complete museum of Materia Medica affords the student opportunity for making himself acquainted with the drugs themselves. During the session, a course of demonstrations on Practical Materia Medica and Pharmacy is given.

During the final course, the physiological action of drugs is dwelt upon at length, and attention will be given to the therapeutic application of all drugs and remedial measures. Prescription writing, and the various modes of administering drugs are explained and illustrated. During the course a series of lectures will be delivered in the theatres of the hospitals on special cases or groups of cases, illustrating important points in both general and special Therapeutics.

MEDICINE.

PROFESSOR, JAMES STEWART.

ASSISTANT PROFESSORS, { F. G. FINLEY. H. A. LAFLEUR.

LECTURER, C. F. MARTIN.

DEMONSTRATORS, { G. GORDON CAMPBELL. W. F. HAMILTON.

While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, no opportunity is lost of illustrating and explaining the general laws of disease. With the exception of certain affections seldom or never observed in this country, all the important internal diseases of the body, except those peculiar to women and children, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Professor of Pathology.

The College possesses an extensive series of Anatomical plates and models illustrative of the Histological and Anatomical appearances of disease, and the wards of the General and Royal Victoria Hospitals afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to demonstrate the results of treatment.

CLINICAL MEDICINE.

PROFESSOR, JAMES STEWART.

ASSOCIATE PROFESSORS, F. G. FINLEY and H. A. LAFLEUR.

LECTURER, C. F. MARTIN.

The instruction in Clinical Medicine is conducted in the theatres, wards, out-patient rooms and laboratories of the Royal Victoria and Montreal General Hospitals.

The courses include :—

I. The reporting of cases by every member of the Graduating Class, a certain number of beds being assigned to each student.

II. Bedside instruction for members of the Graduating Class.

III. Two Clinics weekly in each hospital.

IV. Tutorial instruction for the Junior Classes, in the wards and out-patient rooms of both hospitals.

V. Instruction in Clinical Chemistry and Bacteriology.

SURGERY.

PROFESSOR, THOMAS G. RODDICK.

DEMONSTRATORS, R. C. KIRKPATRICK and A. E. GARROW.

This course consists of the Principles and Practice of Surgery and Surgical Pathology, illustrated by a large collection of preparations from the Museum, as well as by specimens obtained from cases under observation at the Hospitals. The greater part of the course however is devoted to the Practice of Surgery, in which attention is constantly drawn to cases which have been observed by the class during the session. The various surgical appliances are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery form special departments of this course.

CLINICAL SURGERY.

PROFESSOR, JAMES BELL.

ASSOCIATE PROFESSOR, GEORGE E. ARMSTRONG.

LECTURER, R. C. KIRKPATRICK.

DEMONSTRATORS, KENNETH CAMERON and A. E. GARROW.

The teaching in Clinical Surgery is conducted at the Montreal General and Royal Victoria Hospitals.

I. In the amphitheatre of each of these Hospitals, demonstrations are given and operations are performed before the senior and junior classes on alternate days.

II. Small ward classes of about 10 men in each are taken through the wards by the surgeon in attendance, and instruction given at the bedside concerning the nature and management of surgical cases, in each hospital, at least once per week.

III. Beds are assigned to students in rotation, and each student is required to carefully study and report cases and to assist in the surgical dressing of the same. Certificates of case reporting are given and are essential for graduation.

IV. In the Out-patient Department students have an exceptionally good opportunity to study a great variety of injuries, to witness operations in minor surgery, to come into personal contact with patient, and to take part in the application of a variety of surgical dressings and appliances.

OBSTETRICS AND DISEASES OF INFANTS.

PROFESSOR, J. CHALMERS CAMERON.

DEMONSTRATOR, D. J. EVANS.

This course will embrace : 1. Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, complete sets of models illustrating deformities of the pelvis, wax preparations, bronze mechanical pelvis, &c. 2. Bedside instruction in the Montreal Maternity, including external palpation, pelvimetry, the management and after-treatment of cases. 3. A complete course on obstetric operations with the phantom and preserved foetuses. 4. The diseases of Infancy. 5. A course of individual clinical instruction at the Montreal Maternity.

Arrangements have now been made for a graded course in Obstetrics, instruction being given separately to third year and final students.

Particular attention is given to Clinical instruction, and a Clinical examination in Midwifery similar to that held in Medicine and Surgery now forms part of the final examination.

A short course of lectures on diseases of infancy is given, supplemented by Clinical demonstration and ward work.

GYNÆCOLOGY.

PROFESSOR, WM. GARDNER.

ASSOCIATE PROFESSOR, T. JOHNSON-ALLOWAY.

DEMONSTRATORS, F. A. L. LOCKHART and J. C. WEBSTER.

The didactic course is graded and consists of from forty to forty-five lectures given at intervals alternating with the lectures on Obstetrics and extending throughout the session. The anatomy and physiology of the organs and parts concerned is first discussed. Then the various methods of examination are fully described, the necessary instruments exhibited, and their uses explained.

The diseases peculiar to women are considered as fully as time permits, somewhat in the following order :—Disorders of Menstruation ; Leucorrhoea ; Diseases of the External Genital Organs ; Inflammations, Lacerations and Displacements of the Uterus ; Pelvic Cellulitis and Peritonitis and Inflammations of the Ovaries and Fallopian Tubes ; Benign and Malignant growths of the Uterus ; Tumours of the Ovary ; Diseases of the Bladder and Urethra. The lectures are illustrated as fully as possible by drawings and morbid specimens.

Clinical teaching, including out-patient and bed-side instruction, is given at both Royal Victoria and Montreal General Hospitals by Professors Gardner and Alloway. A large amount of Clinical material is thus available for practical instruction in this department of medicine. Numerous operations are done before the class, and made the subject of remarks. In addition to the ward-patients each hospital conducts a large out-patient Gynaecological Clinic to which advanced students are admitted in rotation and instructed in digital and bimanual examination and in the use of instruments for diagnosis.

Particular attention is thus given to Clinical instruction, and a Clinical examination in Gynaecology similar to that held in Medicine and Surgery now forms part of the final examination.

MEDICAL JURISPRUDENCE.

Professor, Geo. Wilkins.

Lecturer on Mental Diseases, J. W. Burgess.

Lecturer on Medico-Legal Pathology, Wyatt Johnston.

This course includes Insanity, the subject being treated of in its Medical as well as Medico-Legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopic tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shown by the Microspectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects, usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning, and classification of poisons, are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the class. A short course of demonstrations on Medico-legal Pathology also forms part of the instruction in this department. This course includes post-mortem methods in medico-legal cases, the pathological conditions characteristic of the more important forms of violent death and the natural causes of sudden death, which are liable to excite suspicions of homicide. The lectures are illustrated by specimens from the Coroner's Court.

OPHTHALMOLOGY AND OTOLOGY.

PROFESSOR, FRANK BULLER.
LECTURER, J. J. GARDNER.

This will include a course of twenty-five lectures on diseases of the Eye and Ear, both didactic and clinical. In the former, the general principles of diagnosis and treatment will be dealt with; including three lectures on the errors of refraction and faults of accommodation. At the clinical lectures given in the Hospitals cases illustrative of the typical forms of ordinary diseases of the Eye and Ear will be exhibited and explained to the class. In the out-patients' department of each Hospital students have excellent opportunities of gaining clinical experience.

BOTANY.

PROFESSOR, D. P. PENHALLOW.

The purpose of this course is to give the students a good grounding in the general principles of Morphology and Classification, and to advance their knowledge of the comparative physiology of animals and plants. The work comprises :

1. A course of lectures on General Morphology and Classification, together with a discussion of some of the more important functions of the plant.

2. Laboratory studies of fresh material, together with demonstrations of the more minute structures, by means of the compound microscope. In this work typical plants are studied critically with respect to their life histories, the treatment being such as to give prominence to the law of development as exemplified by the principal groups of plants.

ZOOLOGY.

LECTURER, W. E. DEEKS (ARTS).

This course includes a systematic study of the Morphology and Classification of animals, illustrated by Canadian examples and by the collections in the Peter Redpath Museum. It forms a suitable introduction to Comparative Physiology.

Students may take either Zoology or Botany, but their choice should be regulated by the requirements of the law in the provinces in which they intend to practice.

Students electing either subject must continue therein for the session, except by permission from the Faculty.

Students desiring to take both Zoology and Botany during one session must apply for permission from the Faculty.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum, and to the Museum of the Natural History Society of Montreal.

PATHOLOGY.

Professor, J. G. Adami.

Demonstrators, { W. I. Bradley. W. J. Jamieson.

Assistant Demonstrator, A. G. Nichols.

Laboratory Assistant, E. W. Hammond.

The following courses constitute the teaching on this subject :—

1. A course of General Pathology for Students of the Third Year (optional for those of the Fourth). Lectures are delivered twice weekly throughout the year.

2. A course of demonstrations in the performance of Autopsies for Students of the Third Year. The demonstrations are held once a week, from October until Christmas.

3. Demonstrations upon the Autopsies of the week for Students of the two Final Years. These are given during the session by Dr. Adami at the Royal Victoria Hospital, and by Dr. Wyatt Johnston at the General Hospital.

Practical Courses.

4. The performance of autopsies. Each student is required to take an active part in at least six autopsies. The autopsies are conducted at the General and Royal Victoria Hospitals by the Pathologists of these Hospitals and their assistants. In addition to the actual performance of the *sectio cadaveris*, students are expected to attend the practical instruction given in connection with each autopsy, in the method of preparation and microscopic examination of the removed tissues, so as to become proficient in methods of preparation, staining and mounting.

5. A practical course in Morbid Histology for Students of the Third Year. This class is held once a week during the winter months. Six sections are as a rule distributed at each meeting of the class so that each student obtains a large and representative series of morbid tissues, and upon an average twenty minutes are devoted to the description and examination of each specimen. Laboratory fee to cover cost of slides, reagents, microscope, etc., $5.

6. A course of demonstrations upon Morbid Anatomy (Museum specimens) once weekly during the winter months for students of the Fourth Year.

In addition to the above, the staff of the department give instruction to the more advanced students who desire to undertake any special work in the laboratories. Classes in clinical pathology and microscopy are given, from time to time, at the Pathological Laboratory and at the General and Royal Victoria Hospitals under the direction of the Professors of Clinical Medicine.

DEPARTMENT OF PUBLIC HEALTH AND PREVENTIVE MEDICINE.

PROFESSOR, ROBT. CRAIK.

SANITARY PHYSICS AND CHEMISTRY, { PROF. ROBT. CRAIK. / PROF. R. F. RUTTAN.

BACTERIOLOGY AND PREVENTIVE MEDICINE. { PROF. J. G. ADAMI. / PROF. WYATT JOHNSTON. / DR. H. B. YATES.

The Department of Public Health and Preventive Medicine has, owing to its endowment by Sir Donald A. Smith, been made one of the most important subjects of the third year.

The instruction will consist of two lectures per week for the whole session. A systematic course in Bacteriology and Preventive Medicine, including Serum Therapy, will be followed by courses on the sanitary relations of water, soil, food and air, the use and relative value of disinfectants, domestic sanitation, including plumbing, heating, ventilations, the construction of habitations, etc., and will be illustrated by models and special apparatus. Lectures will also be given on personal hygiene, including bathing, exercise, etc., and on climate and health resorts. In addition to the course of systematic lectures, laboratory courses will be given in the Pathological and Chemical laboratories on Bacteriology, clinical and sanitary Chemistry. The laboratory work will extend over a period of three months, and will be given twice weekly.

A working museum and model room is being equipped this summer with working models and apparatus to illustrate the application of hygienic principles. Demonstrations will be given in the hygienic museum from time to time as required. (See Museums.)

LARYNGOLOGY AND RHINOLOGY.

PROFESSOR, H. S. BIRKETT.

This course will consist of practical lessons in the use of the Laryngoscope and Rhinoscope. The instruction will be carried on with small classes so that individual attention may be insured. A limited number of clinical lectures bearing upon interesting cases attending the clinic will be delivered during the session. These lectures will be, however, of an eminently practical nature.

MENTAL DISEASES.

LECTURER, T. J. W. BURGESS.

This course will comprise a series of lectures at the University on Insanity in its various forms, from a medical as well as from a medico-legal standpoint. The various types of mental diseases will be illustrated by cases in the Verdun Asylum, where clinical instruction will be given to groups of senior students at intervals throughout the session.

DISEASES OF INFANTS AND CHILDREN.

PROFESSORS, { J. C. CAMERON. / A. D. BLACKADER.

Although this subject does not consitute a special chair in the University, systematic instruction is given (*a*) in connection with the chair of Obstetrics and Diseases of Infants, by Prof. Cameron ; (*b*) by a course of lectures, clinical and didactic, by Prof. Blackader, and (*c*) through the Children's Clinic at the Montreal General Hospital and at the Infants' Home.

IV.

DOUBLE COURSES.

By special arrangement with the Faculty of Arts, it is now possible for students to obtain the double degree of B.A. and M.D., C.M., after only six years of study.

It has been decided to allow the Primary subjects (Anatomy, Physiology and Chemistry) in Medicine to count as Honor subjects of the third and fourth years in Arts. It follows then that at the end of four years study a student may obtain his B.A. degree and have two years of his medical course completed.

The remaining two years of study are devoted to the third and fourth year subjects in Medicine.

The special provisions for Medical Students in the Arts course are as follows :

In the First Year, instead of the Chemistry appointed, a Medical Student may substitute one half of the Course in Chemistry required of students in the First Year of the Medical Faculty.

[Note.—Should, in the future, the Chemistry in the Faculty of Arts be made equivalent to that of the Faculty of Medicine, it may be taken by any Student proceeding to the Medical Degree in lieu of the course in the Medical Faculty.]

In the Second Year. The remaining half of the Course in Chemistry of the Medical Faculty may be substituted for the Psychology of the First Term and the Mathematical Physics of the Second Year. The Botany Course of the Medical Faculty may be substituted for the Botany in the Arts Course.

[Note.—The Faculty of Medicine advises Medical Students who are following the Courses in Arts prescribed for the double degree, to take the subject of Psychology if possible.]

Third Year.—Physiology and Histology with practical work therein, or Anatomy with Practical Anatomy, together with the regular examinations therein in the Faculty of Medicine, may be substituted for two courses under the heading of "Science" in the curriculum of the Third Year in Arts.

[Note.—If a special course of Physics for Medical Students should be established, Natural Philosophy may not be compulsory.]

Fourth Year.—Students who have completed the Third Year in Arts and First Year in Medicine shall have the same privileges in the Fourth Year as Honour Students in this year, viz., they shall be required to attend two only of the courses of lectures given in the ordinary departments (or one course with the additional course therein), and to pass the corresponding examinations only at the Ordinary B.A. Examination. These courses should for Medical Students be in either Languages or Literature.

Students are recommended in the Third and Fourth Years to continue the study of subjects which they have already taken in the First and Second Years.

In order to obtain the above privileges, the student must give notice at the commencement of the Session to the Dean of the Faculty of Arts of his intention to claim them, and present a certificate from the Registrar of the Medical Faculty that his name is entered on the books of that Faculty. He must produce at the end of the sessions in the first two years

a certificate of attendance on the required lectures and of standing at the corresponding examinations. In the Third and Fourth Years, he must produce certificates that he has completed each year of the Medical curriculum.

A certificate of Licentiate in Arts will be given along with the professional degree in Medicine to those who, previous to entrance upon their professional studies proper, have completed two years in the Faculty of Arts, and have duly passed the prescribed examinations therein.

V.

POST-GRADUATE AND ADVANCED COURSES.

The Faculty of Medicine in 1896 established post-graduate and special courses in connection with the Montreal General and Royal Victoria Hospitals and the various laboratories in the University buildings. These courses will be continued in 1898.

There will be two distinct sets of courses, one a short practical and clinical course for medical men in general practice who desire to keep in touch with recent advances in Medicine, Surgery and Pathology, and who wish special clinical experience in Gynaecology, Ophthalmology, Laryngology, etc. This course will last about six weeks, beginning about the beginning of May.

A special detailed programme will be prepared and will be sent on application in February next. The fee, including hospital fees for both Hospitals, is fifty dollars.

The other courses will be for those who have just completed their regular course in Medicine, and desire special Laboratory or Clinical teaching before beginning practice.

Arrangements have also been made to accommodate a limited number of such graduates who desire advanced and research work.

Commodious laboratories for advanced work have been equipped in connection with the Pathological and Clinical departments of both the Royal Victoria and Montreal General Hospitals, and in connection with the general laboratories for Pathology, Physiology and Chemistry, recently altered and extended in the new buildings of the Faculty.

Recent graduates of recognized universities desiring to qualify for examinations by advanced laboratory courses, or who wish to engage in special research, may enter at any time by giving a month's notice, stating the courses desired and the time at their disposal.

All the regular clinics and demonstrations of both hospitals will be open to such students on the same conditions as undergraduates in medicine of this University.

These laboratories will be open for graduates about May 1st, 1898.

Further details regarding courses, fees, etc., may be obtained on application to the Registrar after January, 1898.

THE POST-GRADUATE COURSE OF 1897.

The Faculty of Medicine of McGill University has just completed its second Post-Graduate Course. This course of instruction which was given in the various departments of Medicine and Surgery is especially arranged to meet the requirements of the general practitioner who is unable to devote more than a few weeks to the task of overtaking the more recent advances in his profession. The course began May 4th, 1897, and closed June 12th.

Detailed time-tables were issued weekly.

The Course consisted of :—

A. A series of EVENING LECTURES on Recent Advances in Medicine, Surgery, Pathology, etc., four per week, and included the following among others :—

A series of four on the "Diagnosis of Abdominal Tumors," by Prof. William Osler.

Two by Prof. James Stewart, viz : "The Hand in diseases of the Nervous System" and "Facial Expression in Nervous Diseases."

"Diagnosis and Treatment of Tuberculous Joints," by Prof. T. G. Roddick.

A series of two by Prof. Adami on "Referred Pain," "Pathology of Internal Secretion," etc.

"Surgery of the Thyroid," by Prof. F. J. Shepherd.

"Genital Tuberculosis," by Prof. Wm. Gardner.

"The Early Diagnosis and Treatment of Diphtheria," by Prof. Finley.

Two lectures on "Recent Advances in the Physiology of the Circulation and their relation to Practical Medicine and Surgery," by Prof. Wesley Mills.

"On the Diagnosis and Surgery of Appendicitis," by Prof. James Bell.

"Serum Diagnosis and Serum-Therapy," by Dr. C. F. Martin.

"Modern Simple Methods of Disinfection," by Dr. Wyatt Johnston.

"Infant Feeding," by Prof. A. D. Blackader.
Two lectures by Prof. Armstrong on "Gall-stone Surgery and Hernia."
"Early Diagnosis and Treatment of Tuberculosis," by Prof. Lafleur.
"Climate and Disease," by Dr. Solly, of Colorado.
"The Doctor and Life Insurance," by Prof. Wilkins.

B. General Clinics.—The afternoons of each day were devoted to Clinical work in the wards of the Montreal General and Royal Victoria Hospitals. Clinics in General Surgery were given by Profs. Shepherd and Bell, and in General Medicine by Profs. Jas. Stewart, Blackader, Lafleur and Findley.

These Clinics were given on four days of each week, and were followed by a Special Clinic and the course in Operative Surgery.

The afternoons of the remaining two days of each week were occupied entirely by one or more of the following Special Clinics :

C. Special Clinics.—In Ophthalmology, including diseases of the Conjunctiva, Iris, Cornea and Retina, at the Royal Victoria Hospital, by Prof. F. Buller, and at the Montreal General Hospital, by Dr. J. J. Gardner. Special instruction in the use of the Ophthalmoscope was also given.

In Gynaecology, at the Royal Victoria Hospital, by Prof. Wm. Gardner and Dr. J. C. Webster, and at the Montreal General Hospital, by Prof. Alloway and Dr. Lockhart.

In Laryngology and the use of the Laryngoscope, at the Montreal General Hospital, by Prof. Birkett and Dr. Hamilton.

In External Palpation and Aseptic Midwifery, at the Montreal Maternity Hospital, by Prof. J. C. Cameron.

In Diseases of Children, at the Montreal General Hospital, by Profs. A. D. Blackader and G. G. Campbell.

In Dermatology, at the Montreal General Hospital, by Prof. Shepherd.

In Diseases of the Genito-Urinary Organs, at the Royal Victoria Hospital, by Prof. James Bell.

In Orthopaedics, at the Montreal General Hospital, by Dr. C. W. Wilson.

In the mornings, from nine to twelve, two or more of the following Special Demonstrations, Laboratory Courses or Laboratory Demonstrations, were given :

D. Special Demonstrations.—These were given, on Surgical Instruments, by Prof. Armstrong ; Mental Diseases, at Verdun Asylum, by Dr. T. J. W. Burgess ; Medico-Legal Autopsy Methods, by Dr. Wyatt Johnston ; Operative Obstetrics, by Dr. J. C. Cameron.

E. Laboratory Courses.—These were continued for varying periods, for which a small extra fee was charged, enough to cover cost of material, on Operative Surgery, by Prof. Armstrong; Clinical Bacteriology, Clinical Microscopy of Dejecta and Blood, by Drs. Wyatt Johnston and Martin ; Clinical Chemistry, by Prof. Ruttan, and Post-Mortem Methods, by Dr. Wyatt Johnston.

The demonstrations in Operative Surgery, Clinical Microscopy of Dejecta and Blood, and the Clinical Bacteriology, were given throughout the entire course, four or five times per week.

F. Laboratory Demonstrations.—On the Physiology of the Circulation and the Nervous System, by Prof. Wesley Mills ; Morbid Anatomy, by Dr. Wyatt Johnston ; Medical and Surgical Anatomy, by Drs. Elder and McCarthy ; Microscopical Methods, by Dr. Gunn ; Urinalysis, by Dr. Ruttan ; Scrum-Therapy and Serum Diagnosis of Typhoid, by Dr. Martin.

The courses in Dissecting and Operative Surgery, and the demonstrations in Physiology, were given during the first week.

The fee for the whole course, including hospital fees for both Hospitals, Royal Victoria and Montreal General, was fifty dollars.

VI.

QUALIFICATIONS FOR THE DEGREE.*

1st. No one entering after September, 1894,will be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not have attended Lectures for a period of four nine months' sessions in this University, or some other University, College or School of Medicine, approved of by this University.

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* *It shall be understood that the programme and regulations regarding courses of study and examinations contained in this calendar hold good for this calendar year only, and that the Faculty of Medicine, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely for the whole four years of a student's course to the conditions now laid down.*

2nd. Students of other Universities so approved and admitted, on production of certificate to a like standing in this University, shall be required to pass all Examinations in Primary and Final Subjects in the same manner as Students of this University.

3rd. Graduates in Arts who have taken two full courses in General Chemistry, including Laboratory work, two courses in Biology, including the subjects of Botany, Embryology, Elementary Physiology and dissection of one or more types of Vertebrata, may, at the discretion of the Faculty, be admitted as second-year Students, such courses being accepted as equivalent to the first-year in Medicine. Students so entering will, however, not be allowed to present themselves for examination in Anatomy, until they produce certificates of dissection for two sessions.

4th. Candidates for Final Examination shall furnish Testimonials of attendance on the following branches of Medical Education,* viz :

Anatomy. Practical Anat my. Physiology. Chemistry. Pharmacology and Therapeutics. Princip'es and Practice of Surgery. Obstetrics and Diseases of Infants. Gynæcology. Theory and Practice of Medicine. C inical Medicine. Clinical Surgery.	Of which Two full Courses will be required
Medical Jurisprudence. General Pathology. Hygiene and Public Health. Practical Chemistry. Ophthalmology and Otology.	Of which One full Course will be required.†
Botany and Zoology. Histology. Pathological Anatomy. Bacteriology. Mental Diseases. Pediatrics. Medical and Surgical Anatomy.	Of which One Course will be required.

He must also produce Certificates of having assisted at six Autopsies, of having Dispensed Medicine for a period of three months, and of having assisted at twenty Vaccinations.

5th. Courses of less length than the above will only be received for the time over which they have extended.

6th. No one will be permitted to become a Candidate for

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* A course in medical, surgical and topographical anatomy will be given for students qualifying for the Ontario Medical College.

† Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated, may be presented and accepted.

the degree who shall not have attended at least one full Session at this University.

7th. The Candidates must give proof of having attended during at least eighteen months the practice of the Montreal General Hospital or of the Royal Victoria Hospital, or of some other Hospital of not fewer than 100 beds, approved of by this University. Undergraduates are required to attend the Out-Patient departments of the Hospitals during their second year.

8th. He must give proof of having acted as Clinical Clerk for six months in Medicine and six months in Surgery in the wards of a general hospital recognized by the Faculty, of having reported at least 10 medical and 10 surgical cases.

9th. He must also give proof by ticket of having attended for at least nine months the practice of the Montreal Maternity or other lying-in-hospital approved of by the University, and of having attended at least six cases.

10th. Every candidate for the degree must, on or before the 15th day of May, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Registrar of the Faculty an affirmation or affidavit that he has attained the age of twenty-one years.

11th. The trials to be undergone by the Candidate shall be in the subjects mentioned in Section 4.

12th. The following oath of affirmation will be exacted from the Candidate before receiving his degree :

Sponsio Academica.

In Facultate Medicinae Universitatis.

Ego, A——B——, Doctoratus in Arte Medica titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo : —me in omnibus grati animi officiis erga hanc Universitatem ad extremum vitae halitum perseveraturum ; tum poro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad aegrotorum corporum salutem coducentia cum fide procuraturum : quae denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita praesens mihi spondenti adsit Numen.

13th. The fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination.

VII.

EXAMINATIONS.*

Frequent oral examinations are held to test the progress of the Student, and occasional written examinations are given throughout the Session.

The Pass and Honor examinations at the close of each Session are arranged as follows :—

First Year.

Examinations in BOTANY or ZOOLOGY, HISTOLOGY, PHYSIOLOGY, ANATOMY, CHEMISTRY, THEORETICAL and PRACTICAL.

Students who have taken one or more University courses in Botany or Chemistry before entering may be exempted from attendance and examination. Students exempted in their first year subjects are allowed only a pass standing, but may present themselves for examination if they desire to attain an honor standing.

Second Year.

Examinations in ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY, PHYSIOLOGY, HISTOLOGY, PHARMACOLOGY and THERAPEUTICS.

Third Year.

Examinations in PHARMACOLOGY and THERAPEUTICS, MEDICAL JURISPRUDENCE, PUBLIC HEALTH and PREVENTIVE MEDICINE (including BACTERIOLOGY), GENERAL PATHOLOGY, MENTAL DISEASES, CLINICAL CHEMISTRY, OBSTETRICS, MEDICINE and SURGERY.

Fourth Year.

Examinations in MEDICINE, SURGERY, OBSTETRICS, GYNAECOLOGY, CLINICAL MEDICINE, CLINICAL SURGERY, CLINICAL OBSTETRICS, CLINICAL GYNAECOLOGY, CLINICAL OPHTHALMOLOGY and PRACTICAL PATHOLOGY.

By means of the above arrangement a certain definite amount of work must be accomplished by the student in each year, and an equitable division is made between the Primary and Final branches.

A minimum of 50 *per cent. in each subject is required to Pass and* 75 *per cent. for Honors.*

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* See foot note, page 180.

Candidates who fail to pass in not more than two subjects of either the first, second or third years may be granted a supplemental examination at the beginning of the following session.

Supplemental examinations will not be granted, except by special permission of the Medical Faculty, and on written application stating reasons, and accompanied with a fee of $5.00 for each subject.

No candidate will be permitted, without special permission of the Faculty, to proceed with the work of the final year until he has passed the subjects comprised in the Primary examination.

No student will be allowed to present himself for his final examinations who has not certificates of having passed all his Primary examinations in this University.

Candidates who fail to pass in a subject of which two courses are required, may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon. A course in Practical Anatomy will be accepted as equivalent to a third course of lectures in General and Descriptive Anatomy.

VIII.

MEDALS AND PRIZES.

1st. The "Holmes Gold Medal," founded by the Medical Faculty in the year 1865, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine. It is awarded to the student of the graduating class who receives the highest aggregate number of marks in the different branches comprised in the Medical Curriculum.

The Student who gains the Holmes' Medal has the option of exchanging it for a Bronze Medal, and the money equivalent of the Gold Medal.

2nd. The Final Prize.—A prize in Books (or a Microscope of equivalent value) awarded for the best examination, written and oral, in the Final branches. The Holmes medallist is not permitted to compete for this prize.

3rd. The Third Year Prize.—A Prize in Books awarded for the best examination, written and oral, in the branches of the third year.

4th. The Second Year Prize.—A prize in books for the best examination in all the branches of the second year in course.

5th The First Year Prize.—A prize in books for the best examination in all the branches of the first year in course.

6th. The "Sutherland Gold Medal," founded in 1878 by the late Mrs. Sutherland in memory of her late husband, Professor William Sutherland, M.D. It is awarded for the best examination in General and Medical Chemistry, together with creditable examination in the primary branches. The examination is held at the end of the third year.

7th. The "Clemesha Prize in Clinical Therapeutics," founded in 1889 by John W. Clemesha, M.D., of Port Hope, Ont. It is awarded to the student making the highest marks in a special clinical examination.

IX.

FEES.

The total Faculty fees for the whole medical course of four full sessions, including clinics, laboratory work, dissecting material and reagents, will be four hundred dollars, payable in four annual instalments of $100 each.

For the convenience of the undergraduates the Hospital fees will hereafter be payable in the Registrar's office at the University. Ten dollars to be paid at the beginning of each of the last three sessions, viz., the second, third and fourth years. This will entitle each undergraduate to perpetual tickets for both the Montreal General and Royal Victoria Hospitals.

Partial students will be admitted to one or more courses on payment of special fees. An annual University fee of two dollars is charged students of all the faculties for the maintenance of college athletics.

It is suggested to parents or guardians of students that the fees be transmitted direct by cheque or P. O. Order to the Registrar, who will furnish official receipts.

All fees are payable in advance to the Registrar, and except by permission of the Faculty will not be received later than October 17th.

For Graduation Fees, see page 182.

For Hospital Fees, see pages 193, 196.

X.

TEXT BOOKS.

Anatomy.—Gray, Morris, Quain (Eng. Ed.).

Practical Anatomy.—Cunningham's Practical Anatomy, Ellis' Demonstrations, Holden's Dissector and Landmark's.

Physics.—Balfour Stewart.

Inorganic Chemistry.—Remsen, Wurtz's Elementary Chemistry.

Organic Chemistry.—Remsen.

Practical Chemistry.—Odling.

Pharmacology and Therapeutics.—White, Bruce, Wood, Hare and National Dispensary.

Physiology.—Foster and Shore's Physiology for Beginners, Mills' Textbook of Animal Physiology, Foster's Physiology, Mills' Class Laboratory Exercises.

Pathology.—Ziegler and Coats' Pathology.

Practical Pathology.—Delafield & Prudden, Payne, Boyce.

Bacteriology.—Abbott's Bacteriology.

Histology.—Klein's Elements, Schafer's Essentials of Histology.

Surgery.—Holmes, Moulin, Walsham, Erichsen, Treves, American Text-book of Surgery, Da Costa.

Practice of Medicine.—Osler, Strümpell and Fagge.

Clinical Medicine.—Musser's Medical Diagnosis; von Jaksch Clinical Diagnosis.

Medical Jurisprudence.—Reese, Guy and Ferrier.

Mental Diseases.—Insanity and its Treatment, Blandford, 4th Ed.

Midwifery.—Lusk, and American Text Book.

Diseases of Children.—Smith, Goodhart and Starr.

Gynaecology.—Thomas and Mundé, Skene, Garrigues.

Hygiene.—Parks, Wilson.

Botany.—Gray's Text Book of Histology and Physiology.

Zoology.—Shipley, Invertebrata; Wiedersheim, Vertebrata.

Ophthalmology.—Nettleship, Higgins, De Schweinitz.

Otology.—Pritchard, Dalby.

Laryngology.—Watson Williams and Karl Seiler.

Medical Dictionary.—Gould, Dunglison, Hoblyn.

XI.

MUSEUMS.

The Faculty has during recent years devoted special attention to the development of its museums in the several departments in which objective teaching is of especial value in the education of the student.

There are now five museums in the Medical Building : (1) the Museum of Pathology, (2) the Anatomical Museum, (3) the Museum of Public Health and Preventive Medicine, (4) the Museum of Pharmacy, (5) the Obstetrical Museum.

Each collection is arranged and selected with the primary object of making it a teaching museum. These several collections are open to students and the public between 9 a.m. and 5 p.m.

Pathological Museum.

Prof. J. G. Adami.

E. J. Semple, Assistant Curator.

M. Bailly, Osteologist and Articulator.

For the past fifty years the rich Pathological Material furnished by the Montreal General Hospital has been collected here. The Faculty is also greatly indebted to many medical men throughout Canada and different parts of the world for important contributions to the Museum.

During the past few years numerous and extremely important additions have been made to the Medical Museum.

It is particularly rich in specimens of Aneurisms. In addition to containing a large number of the more common varieties of these formations, there are specimens of such rare conditions as Aneurism of the Hepatic and Superior Mesenteric Arteries, Traumatic Aneurism of the Vertebral, together with several of the cerebral and pulmonary arteries. The most important collection probably in existence of hearts affected with "Malignant Endocarditis" is also found. The Faculty are indebted to Prof. Osler, late of this University, for this collection.

The Museum contains also a very large collection of different forms of calculi. The Faculty are mainly indebted to Prof. Fenwick for this collection.

During the past six years, M. Bailly, osteologist and articulator (lately with Tramond of Paris), has been engaged in arranging and mounting the very large number of specimens

of disease and injuries of bones which have been accumulating for years. In this collection are to be found examples of fractures and dislocations of the spine, osteoporosis, congenital dislocation of the hip, fracture of the astragalus, multiple exostoses, &c., &c.

This year the Pathological Museum has undergone complete alteration. All the old fixtures have been removed, a new gallery has been erected about both rooms, reached by a single staircase in a small intermediate room in which is placed the medico-legal collection.

The first room on entering contains the extensive bone collection and calculi. The second and larger room is reserved for the moist preparations, which are arranged so as to be of easy access for the student. Water color drawings made from the fresh specimens are mounted on swinging frames and also form a frieze at the ceiling.. These serve to recall the fugitive colors of those preparations which become more or less altered on keeping.

Museum of Public Health and Preventive Medicine.

DIRECTOR, R. F. RUTTAN.

MUSEUM ASSISTANT, CHARLES STEVENSON.

This Museum has been established from the interest accruing through the endowment of the Chair of Hygiene by Sir Donald Smith in 1893 .

The museum at present is chiefly of interest on account of the number and excellence of the working models, illustrating the best modern methods of sterilization, disinfection, filtration and ventilation, together with a very useful collection of modern sanitary apparatus, illustrating the advantages and disadvantages of the water carriage system for the disposal of refuse, etc.

Anatomical Museum.

DIRECTOR, PROFESSOR F. J. SHEPHERD.

M. JULES BAILLY, OSTEOLOGIST AND ARTICULATOR.

This museum occupies a large room on the same floor and adjoining the Anatomy Lecture Room and Dissecting Room. Smaller apartments in connection are used for private research, which is encouraged in every way by the Faculty. The Museum is well furnished and comfortable, and students have every opportunity of studying Human, Comparative and Applied Anatomy. This department has, during the past

few years, added a very complete collection of plaster and papier mache models by Steger, after the well-known works of His and Braune, comprising :

(*a*) A complete set of Steger's brain sections.

(*b.*) Models of the cerebro-spinal and sympathetic nervous systems.

(*c.*) Professor Cunningham's well-known and beautiful casts of the head, showing the relation of the cerebral convolutions to the skull and its sutures.

A large collection of human brains, made by Professor Osler, formerly of this University, exhibiting the various types and extremes. A large and rare collection of anomalies of the Renal vessels and ureter, and the aorta and its branches. In Comparative Anatomy the student will find a fair amount of material, the study of which will greatly aid him in the elucidation of many points in Human Anatomy. Many skeletons mounted by Mons. Jules Bailly, Articulator to the University, representing the various classes, orders, genera and species of the animal kingdom may be consulted. A large collection, showing the pectoral girdle in birds, has been prepared under the supervision of the Professor of Anatomy. Moist and dry preparations of dissections, a large collection of frozen cross-sections of the human body, showing the normal relations of the viscera, etc., will be found convenient for study.

XII.

LIBRARY.

LIBRARIAN, PROF. F. G. FINLEY.

ASSISTANT LIBRARIAN, MISS M. R. CHARLTON.

The Library of the Medical Faculty now comprises upwards of fifteen thousand volumes, the largest special library connected with any medical school on this continent.

The valuable libraries of the late Professors Robert Palmer Howard, George Ross and Richard L. MacDonnell have been donated to the Medical Faculty. They consist of several thousand volumes, including a very complete collection of works on Diseases of the Chest.

The standard text-books and works of reference, together with complete files of the leading periodicals, are on the shelves. Students may consult any work of reference in the library between 9 a.m. and 5 p.m. A library reading-room for the use of students is provided.

During the past year several important additions have been made to the Library. Complete files of Virchow's Archives, the Deutsches Archiv für Klinische Medicin, and of the Zeitschrift für Klinische Medicin, have been purchased, and additions have also been made to the English and American journals, so that now the Library offers for Bibliographical purposes a wide field for research. Although the catalogue is not yet complete, it is estimated that there are at least 15,000 volumes exclusive of duplicates.

The number of volumes presented to the Library to June 1st 1897, is	410
Those added by purchase	227
Total additions for the year	637
The total attendance, from June 2, 1896, to June 1, 1897, has been	5,920
The attendance during the previous year was	4,875

XIII.

McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets every alternate Saturday during the Autumn and Winter Terms, for the reading of papers, case reports and discussions on medical subjects. A prize competition has been established in senior and junior subjects, the senior being open to all to write upon, while only the 1st, 2nd and 3rd year students are allowed to compete in the junior subjects. The papers are examined by a board elected from the Professoriate, and a first and second prize in each division of subjects is awarded to the successful candidates.

Names of competitors and titles of papers shall be sent to the Chairman of the Programme Committee before September 1st, and all papers shall be subject to the call of the Committee on October 1st. All papers shall be handed in for examination on or before January 10th.

The Students' reading room has been placed under the control of this Society, in which the leading English and American Medical Journals are on file as well as the leading daily and weekly newspapers of the Dominion.

The annual meeting is held the first week of the Spring Term, when the following officers are elected : Hon. President, elected from the Faculty ; President, Vice-President, Secre-

tary, Assistant Secretary, Treasurer, Reporter, Pathologist and three Councilmen, two of whom shall be elected from the Faculty.

XIV.

COST OF LIVING, &c.

This will, of course, vary with the tastes and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good board may be obtained from $15 to $20 per month. A list of boarding-houses, which are inspected annually by a sanitary committee, is prepared by the Secretary of the University, and may be procured from the Janitor at the Medical College.

XV.

HOSPITALS.

The City of Montreal is celebrated for the number and importance of its public charities. Among these its public hospitals are the most prominent and widely known. Those in which medical students of McGill University will receive clinical instruction are : (1.) The Montreal General Hospital. (2.) The Royal Victoria Hospital. (3.) Montreal Maternity Hospital.

The Montreal General Hospital has for many years been the most extensive clinical field in Canada. The old buildings, having proved inadequate to meet the increased demand for hospital accommodation, have recently been increased by the addition of two surgical pavilions, the Campbell Memorial and the Greenshield's Memorial, and of a new surgical theatre. The interior of the older buildings has now been entirely reconstructed on the most approved modern plans.

The Royal Victoria Hospital at the head of University Street was opened for the reception of patients the first of January, 1894, and affords exceptional opportunities for clinical instruction and practical training.

Montreal General Hospital.

This hospital has been for many years the most extensive Clinical field in Canada.

It consists of a Surgical and Medical Department.

The Surgical Department has two large pavilions, containing four wards 135 feet long by 35 broad, with an intervening and connecting building in which is a large operating theatre of the most modern type, capable of seating over three

hundred and fifty students. In connection with this are preparation, etherizing, instruments, sterilizing and surgeons' rooms, also smaller operating rooms. The Surgical pavilions which were built three years ago, accommodate over one hundred patients.

The old part of the hospital, consisting of the Reed, Richardson and Morland wings, has during the past year been completely rebuilt and remodelled and forms the Medical Department. This part contains four wards, 100 feet by 40 and is arranged for 150 beds. In this building there are wards for Gynaecological and Ophthalmological patients, a number of private wards and laboratories for Clinical Chemistry. There is also a medical amphitheatre capable of seating 150 students and a gynaecological operating room fitted up in the most modern manner. The central part of the old building is for administration purposes.

A completely new and commodious out-door patient department has been provided on the ground floor of the Richardson wing, and there is ample accommodation for the various special departments as well as large rooms for general medical and surgical patients.

The Pathological Department is a completely new building and is provided with a post-mortem theatre and rooms for microscopical and bacteriological work, and also a mortuary and chapel. In this building students are offered every opportunity of perfecting their knowledge of morbid and pathological anatomy.

A large Fever Hospital under the management of the General Hospital has lately been built by the city and is situated at some distance off. It is under the medical charge of the physicians of the Montreal General Hospital, and at stated times small classes of students will visit the new hospital with the physicians in charge.

The old Fever Hospital on the grounds of the Hospital has been completely remodelled, and is now used as a laundry and kitchen.

A much larger number of patients receive treatment in the Montreal General Hospital than in any other Canadian Hospital. Last year's report shows that between two and three thousand Medical and Surgical cases were treated in the wards, and the great proportion of these were acute cases, as may be gathered from the fact that the average duration of residence was only 24.02 days. Upwards of thirty-two thousand patients are annually treated in the out-door department of this Hospital.

Annual tickets entitling students to admission to the Hospital must be taken out at the commencement of the session, price $5.00. These are obtained at the Hospital. Perpetual tickets will be given on payment of the third annual fee.

The Royal Victoria Hospital.

This Hospital is situated a short distance above the University Grounds on the side of the Mountain, and overlooks the city. It was founded in July, 1887, by the munificence of Lord Mount Stephen and Sir Donald Smith, who gave half a million dollars each for this purpose.

The buildings, which were opened for the reception of patients on the first of January, 1894, were designed by Mr. Saxon Snell of London, England, to accommodate between 250 and 300 patients.

The Hospital is composed of three main buildings connected together by stone bridges ; an Administration Block in the centre, and a wing on the east side for medical patients, in immediate connection with which is the new Pathological wing and mortuary, and a wing on the west side for surgical patients.

The Administration block contains ample accommodation for the resident medical staff, the nursing staff and domestics. The patients' entrance, the dispensary and admission rooms are also situated in this building.

The Medical wing contains three large wards, each 123 feet long by 26 feet 6 inches wide, one ward 40 feet by 26 feet 6 inches, and fifteen private and isolation wards averaging 16 feet by 12 feet, also a medical theatre with a seating capacity for 250, and three rooms adjacent to it for clinical chemistry and other purposes. North of this wing and in direct connection with it are the Pathological laboratories and mortuary.

In this wing are situated the mortuary proper, the chapel, a post mortem room capable of accommodating 200 students, and laboratories for the microscopic and bacteriological study of morbid tissues, some designed for the use of students and others for post graduation courses and special research. Special laboratories for Pathological chemistry, Experimental Pathology, Bacteriology and Photography are also provided.

The Surgical wing contains three large wards, each 123 feet long by 26 feet 6 inches wide, four wards each 40 feet by 32 feet, and seven private and isolation wards, averaging 16 feet by 12 feet ; also a surgical theatre with a seating capacity for 250, with six rooms adjacent for preparation and after recovery purposes.

In this wing are also the wards for Gynaecology and Ophthalmology.

XVI.

CLINICAL INSTRUCTION.

During the Session of 1897-98, two Medical, two Surgical, one Gynaecological and one Ophthalmological clinic will be held weekly in both the Montreal General and Royal Victoria Hospitals.

In addition, tutorial instruction will be given in these different departments in the wards, out-patient rooms and laboratories. Special weekly clinics will be given in the Montreal General Hospital on Dermatology and Laryngology and in the Royal Victoria Hospital on diseases of the Genito-Urinary system.

Clinical Clerks in the medical and surgical wards of both Hospitals are appointed every three months, and each one during his term of service conducts, under the immediate directions of the Clinical Professors, the reporting of all cases in the ward allotted him. Students entering on and after October, 1893, will be required to show a certificate of having acted for six months as clinical clerk in medicine and six months in surgery, and are required to have reported at least ten cases in medicine and ten in surgery. The instruction obtained as clinical clerk is found to be of the greatest possible advantage to Students, as affording a true *practical* training for his future professional life.

Dressers are also appointed to the Out-door Departments. For these appointments, application is to be made to the Assistant Surgeons, or to the resident surgeon in charge of the out-patient department.

The large number of patients affected with diseases of the eye and ear, now attending the special clinics at both hospitals, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by the Ophthalmic Surgeon after the outdoor patients have been seen, and Students are invited to attend the same, and, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

There are now special departments in both Hospitals for

Gynaecology, presided over by Specialists in the branches. Students are thus enabled to acquire special technical knowledge under skilled direction. The plan of teaching practical gynaecology for the past five years with marked success has been the limitation of the number of Students to two or three, who, in rotation, assist at the examinations, and receive instruction in the diagnosis and treatment of uterine diseases and the use of gynaecological instruments.

The Clinics at the Montreal General Hospital in Dermatology and Laryngology are very large and afford a practical training in affections of the skin and throat rarely obtained by medical students.

Infectious diseases and Insanity will also be taught clinically, the former in the special wards for infectious diseases, and the latter at the Verdun Hospital for the Insane.

The Montreal Maternity.

The Faculty has great pleasure in announcing that the Corporation of the Montreal Maternity has recently made very important additions to its building, and has still further improvements in contemplation. Students will therefore have greatly increased facilities for obtaining a practical knowledge of obstetrics and diseases of infancy. An improved Tarnier-Budin phantom is provided for the use of the students, and every facility afforded for acquiring a practical knowledge of the various obstetric manipulations. The institution is under the direct supervision of the Professor of Midwifery, who devotes much time and attention to individual instruction. Students who have attended the course on obstetrics during the autumn and winter terms of the third year will be furnished with cases in rotation, which they will be required to report and attend till convalescent. Clinical midwifery has been placed upon the same basis as Clinical Medicine and Surgery, and a final Clinical examination instituted. Regular courses of clinical lectures are given throughout the session. Special attention is paid to the important subject of infant feeding. The Walker Girden process of modifying milk is explained and demonstrated. During the autumn and winter terms the Demonstrator of Obstetrics gives Clinical Demonstrations in the wards and instruction in operative work on the phantom. Students will find it very much to their advantage to pay special attention to their Clinical work during the spring term of the third year and the following summer. Two resident accoucheurs are appointed yearly from the graduating class to hold office for a period of six months each.

Fee for twelve months, $12.00, payable at the Maternity Hospital.

XVII.

STUDENT'S APPOINTMENTS.

Montreal General Hospital—Seven Resident Medical Officers.
Royal Victoria Hospital—Six Resident Medical Officers.
University Maternity—Two Resident Medical Officers.
Clinical Clerk, Gynaecology.
" " Laryngology.
" " Diseases of Children.
" " Dermatology.
" " Diseases of Nervous System.
Out-door Dressers.
Dressers in Eye and Ear Department.
Medical Clinical Clerks.
Post-mortem Clerks.
Student Demonstrators of Anatomy, 4 third-year Students.
Prosectors to Chair of Anatomy, 4.
Assistants in Practical Histology Course, 2.
Assistants in Practical Physiology Course, 4.
Assistants in Practical Chemistry, 6.

XVIII.

RULES FOR STUDENTS.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any offence against discipline, after admonition by the Professor, shall be reported to the Dean of the Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

3. While in the College, Students are expected to conduct themselves in the same orderly manner as in the Class-room.

4. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing for prizes and honors, suspend from Classes, or report to the Corporation for expulsion.

Faculty of Law.

THE PRINCIPAL: Ex Officio.

PROFESSORS.

HON. MR. JUSTICE WURTELE, D.C.L.
LEO H. DAVIDSON, M.A., D.C.L., Q.C.
HON. C. A. GEOFFRION, Q.C., D.C.L., P.C.
A. MCGOUN, M.A, B.C.L.
T. FORTIN, LL.L., B.C L.
HON. MR. JUSTICE DOHERTY, D.C.L.
W. DE M MARLER, B.A., D.C.L.
E. LAFLEUR, B.A., B.C.L.
Lecturer: P. C. RYAN, B.C.L.

Secretary and Registrar; ARCHIBALD MCGOUN, M.A., B.C.L.
Matriculation Examiner; EUGENE LAFLEUR, B.A., B.C.L.

The complete course of Lectures in this Faculty extends over three years and comprises all the leading branches of Legal Study; and is designed to fully qualify those who faithfully follow it for admission to the Bar of Lower Canada.

From the fact that the system of law prevailing in the Province of Quebec rests upon the principles established in the Roman Law and in the Civil Law of France, embracing also the Commercial and Criminal Law of England as modified by our own legislation, it is believed that those availing themselves of the opportunity offered by the course of the Faculty of Law of McGill obtain a more extended and comprehensive knowledge of legal subjects and are better qualified for practice in any field than is possible under more limited conditions.

The course of Study pursued—embracing Constitutional Law and History, and familiarizing the student with the close and definite reasoning of the great Civil Law writers—affords admirable preparation for public life, as is evidenced by the fact that graduates of this Faculty are and have been, for years foremost in the field of politics.

It is also believed that to those engaged in business life the course in Commercial Law will be found specially advantageous and helpful, and can be availed of under the provision made for particular or special Courses.

Students have the free use of the Law Library of the Faculty, comprising the law libraries of the late F. Griffin, Q.C., Mr. Chancellor Day and Mr. Justice MacKay, as also that of the late Mr. Justice Torrance, belonging to the Fraser Institute, which has now been removed to the Redpath Library Building in the College Grounds ; and where a special room has been provided for the law students for reading and consultation.

The Lectures are delivered in the new and well appointed rooms provided for the Faculty in the East Wing of McGill by the generosity of its already munificent benefactor, W. C. McDonald, Esq.

While the Faculty accepts for matriculation the requirements stated in the Regulations below, it nevertheless strongly recommends students intending to study law to take the B.A. course in the Faculty of Arts as a preliminary qualification ; and if that be not attainable, as much as possible of the Arts course.

Lectures and Examinations.

The classes in Law will begin on Tuesday, 7th September, 1897, at 4 p.m.

The Supplemental and Matriculation Examinations will be held on the same day, at 10 a.m.

The lectures will be delivered in two terms : the first beginning on Tuesday, 7th September, 1897, and the second beginning on Monday, 10th January, 1898.

The Examinations will be held in the William Molson Hall, McGill College building, at Christmas, and at the close of the session, and as announced below, unless otherwise determined by the Faculty.

The complete course of study in this Faculty extends over three years. Attendance at lectures is required of all students proceeding to the degree of B.C.L.

Scholarships and Prizes.

Two scholarships, each of one hundred dollars, are offered for competition, the preference being given to students whose domicile is not in Montreal or vicinity. They will be awarded after the Sessional Examinations in April, 1898, upon the results of the Examinations of the first year, and will be payable during the second year.

Prizes open to competition by all the students except the medalist and holders of scholarships will also be given to the students taking the best standing in each year.

No scholarship or prize shall, however, be awarded to any student unless a sufficiently high standing, in the estimation of the Faculty, be attained, to merit it.

Classification of Students.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation for attendance on any particular series of Lectures.

Students who have completed their course of three years, and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student may apply to the Secretary, Prof. McGoun, 181 St. James Street, for examination and entry in the Register of Matriculation, and may procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course.

2. The Degree of B.A. obtained from any Canadian or other British University ; or a certificate of having passed the examination before the Bar for admission to study Law in the Province of Quebec ; or the intermediate Examination in the Faculty of Arts in McGill University, will be accepted in lieu of Examination for Matriculation in this Faculty. For other candidates the Matriculation Examination this year will be in the following subjects :—

Latin.—Virgil, Aeneid, Book I.; Cicero, Orations I. and II. against Catiline. Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires;" *Molière, "Le Bourgeois Gentilhomme"; †Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in Composition and Grammatical Analysis, in English and French.

Mathematics.—Arithmetic; Algebra to the end of Simple Equations; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual); *Green's Short History of the English People; Miles' School History of Canada; †Duruy, Histoire de France.

Literature.—*Collier's Biographical History of English Literature; †Laharpe Course de Littérature; †Lefranc, Course de Littérature.

Rhetoric.—Whately's Rhetoric; Blair's Lectures (small edition).

Philosophy.—Whately's Logic; †Logique de Port Royal; †Cousin, Histoire de la Philosophie; *Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English Students only. Those preceded by a cross are for French Students only. The remainder are for both English and French.

3. Students of Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

4. The register of Matriculation shall be closed on the 1st November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Partial Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket or tickets for the class or classes they desire to attend.

6. Students who have attended collegiate courses of legal study in other Universities, for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All students shall be subject to the following regulations for attendance and conduct :—

(*a*) Gowns must be worn during attendance at lectures and when in the College building.

(*b*) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted, and the said class-book shall be submitted to the Faculty, at each monthly meeting ; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(*c*) Punctual attendance on all the classes proper to his year is required of each Student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to and from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the Student, and, if necessary, report him to the Dean.

(*d*) When students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(*e*) Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(*f*) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

(*g*) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice Principal.

8. The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the end of April following.

The lectures will be delivered between the hours of half past eight and half-past nine in the morning, and between four and half-past six in the afternoon ; and special lectures in the evening, at such hours and in such order as shall be determined by the Faculty. Professors

shall have the right to substitute an examination for any such lecture.

9. At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors, and of such other examiners as may be appointed by the Corporation ; which examination shall be conducted by means of printed questions, answered by the Students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty.

After the examinations at the close of the second term, the Faculty shall decide the general standing of the Students, taking into consideration the examinations of both terms, both of which examinations shall be considered the Sessional or Final Examinations for the college year, as the case may be.

10. No Student shall be considered as having kept a Session unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty in the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall in consequence be made between the Examinations of such Students, and those of the Students regularly attending Lectures.

12. No Student shall pass the Degree of B.C.L. unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall, on or before the first day of March, forward such Thesis to the Secretary of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student, who, being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the Medal, which examination shall include the subject of Roman Law.

14. Every Candidate, before receiving the Degree of B.C.L., shall make the following declaration :—

Ego A.B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees in the Faculty are as follows :—

Matriculation or Registration Fee	$ 5 00
Sessional Fee by Ordinary Students	36 00
Grounds Fee, payable by all Students including Partial	2 00
Graduation Fee, including registration as voter in election of fellows	12 50
Fee for each supplemental examination	5 00
Sessional Fee by Partial Students, for each course	3 00
For Partial Students who are students in other departments of the University or affiliated Colleges, taking two or more courses, a single fee of	5 00

Matriculation and Sessional Fees must be paid on or before Nov. 1st; and if not so paid, the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. Partial Students may be admitted into class on such terms as shall be arranged by the Faculty.

17. The requirements and conditions for obtaining the Degree of D.C.L. in course can be ascertained upon application to the Secretary of the Faculty.

SYLLABUS.

Tuesday, 7th September, 1897, Matriculation and Supplemental Examinations, Ordinary Lectures begin.

Saturday, 11th December. Last day for notice to be sent to Secretary of Section of the Bar by candidates at the January Examinations for admission to study or to practice Law in the Province of Quebec.

Monday, 10th January, 1898. Lectures, Second Term, begin.

Wednesday, 12th January. Bar Examinations take place at Montreal.

Tuesday, 1st March. Theses for Degree of B.C.L.

Monday, 25th April. Declaration of results of Examinations.

Friday, 29th April. Convocation for Degrees in Law.

Saturday, 4th June. Last day for notice to be sent to Secretary of Section of the Bar by Candidates at the July Examination for admission to study or to practise Law in the Province of Quebec.

Wednesday, 6th July. Bar Examinations take place at Quebec.

EXAMINATIONS.

The date of the several Examinations will be announced during the session.

will include the following subjects :—

Agency,	Insurance,
Banking,	Marriage Covenants,
Civil Procedure,	Notarial Law,
Constitutional Law,	Obligations,
Contracts,	Real Estate,
Criminal Law,	Roman Law,
History of Law,	Successions.

While this announcement was going through the press, the intimation was received that at a meeting of the Board of Governors, held on the 3rd July, 1897, Frederick Parker Walton, B.A., Oxon., LL.B., Edin., had been appointed Professor of Roman Law, and Dean of the Faculty.

APPENDIX.

The attention of intending Students is called to the following provisions of the Revised Statutes of Quebec and amendments, as bearing on the requirements for the study and practice of Law in the Province.

Article 3544 R.S.Q.—Examinations for admission to study and to practise law in the Province of Quebec are held at the time and place determined by the General Council.

The places and dates as at present fixed are :

MONTREAL.....Wednesday, 12th Jan., 1898.
QUEBEC.....Wednesday, 6th July, 1898.

and alternately at Montreal and Quebec every six months, namely—at Montreal on the second Wednesday of each January, and at Quebec on the first Wednesday of each July.

All information concerning these examinations can be obtained from the General Secretary's Office. The present General Secretary is W. C. Languedoc, Esq., Quebec.

Article 3546.—Candidates must give notice as prescribed by this article, at least one month before the time fixed for the examination, to the Secretary of the Section in which he resides, or in which he has resided for the last six months.

The present Secretary of the Montreal Section is L. E. Bernard, Esq., New York Life Building, Montreal.

Article 3503a.—Added by Statute of Quebec, 53 Victoria (1890), Cap. 45, provides that Candidates holding the diploma of Bachelor of Arts, Bachelier-es-Lettres, or Bachelier-es-Science from a Canadian or other British University, is dispensed from the examination for admission to study. Such Candidates are required to give the notice mentioned above.

Article 3548 R.S.Q. (as altered by by-law of the General Council). On giving the notice prescribed by Article 3546, the Candidate pays the Secretary a fee of $2, and makes a deposit of $30 for admission to study, or of $70 for admission to practice, which deposit, less $10, is returned in case of his not being admitted.

Article 3552 (amended 1894, Q. 57 Vic., c. 35).—To be admitted to practice, the Student must be a British subject, and must have studied regularly and without interruption during ordinary office hours, under indentures before a Notary as Clerk, or Student with a practising Advocate, during Four Years, *dating from the registration of the certificate of admission to study.* This term is reduced to Three Years in the case of a student who has followed a regular law course in a University or College in this Province, and taken a degree in law therein.

REQUIREMENTS FOR DEGREE OF DOCTOR OF CIVIL LAW.

ADOPTED OCTOBER, 1881.

Every Candidate for the degree of D.C.L. in Course must be a Bachelor of Civil Law of twelve years' standing, and must pass such examination for the Degree of D.C.L. as shall be prescribed by the Faculty of Law. He shall also, at least two months before proceeding to the Degree, deliver to the Faculty twenty-five printed copies of a Thesis or Treatise of his own composition on some subject, selected or approved by the Faculty, such Thesis to contain not less than fifty octavo pages of printed matter, and to possess such degree of merit as shall, in the opinion of the Faculty, justify them in recommending him for the degree.

The candidate shall also pay to the Secretary of the Faculty, annually during the period of twelve years, for the retention of his name on the books of the Faculty, a fee of two dollars, to from part of the Library Fund of the Faculty. Upon cause shown, however, and with the consent of the Faculty, such fees may be paid at one time before the granting of the degree.

The Examination for the Degree of D.C.L. in Course, which shall be open to all who have taken the degree of B.C.L. of this University in the past, as well as to such as may take the degree in future, shall, until changed, be on the following subjects and authors, with the requirement of special proficiency in some one of the groups below indicated. In the groups other than the one selected by the Candidate for special proficiency, a thorough acquaintance with two works of each group shall be sufficient, including in all cases the work first mentioned in each group and the first two works in group third.

1. International Law.

Philimore, International Law.
Hall, " "
Wharton, Conflict of Laws.
Savigny's International Law, by Guthrie.
Foelix, Droit International Privé.
Brocher, Droit International Privé.
Dicey on Domicile.
Story, Conflict of Laws.
Maine, Lectures on International Law.

2. Roman Law.

Ortolan's Institutes.
Mommsen's History of Rome.
Roby's Introduction to the Digest.
Muirhead's Roman Law.
Mackenzie's Roman Law.
Savigny's Roman Law in the Middle Ages.
Bryce's Holy Roman Empire.
Institutes of Gaius.
Fustel de Coulanges, La Cité Antique.

3. Constitutional History and Law.

Dicey's Law of the Constitution.
Stubbs' Constitutional History of England.
Hearn, Government of England.
Bagehot, English Constitution.
Franqueville, Gouvernement et Parlement Britanniques.
Gneist, Constitution of England.
Hallam, Constitutional History of England.
May, " " "
Gardiner, " " "
May, Democracy in Europe.
Freeman, Growth of the English Constitution.
Mill, Representative Government.
Bentham, Fragment on Government.
Maine, Popular Government.

4. Constitution of Canada and Works relevant thereto.

Todd, Parliamentary Government in the British Colonies.
Bourinot, Federal Government in Canada.
Doutre, Constitution of Canada.
Cartwright, Cases under the British North America Act.
Lord Durham's Report on British North America.
Lareau, Histoire du Droit Canadien.
Houston's Constitutional Documents of Canada.
Volume O., Statutes of Lower Canada.
Masères' Collection of Quebec Commissions.
Laferrière, Essai sur l'Histoire du Droit Français.
Dilke, Problems of Greater Britain.
Matthews (Jehu), A Colonist on the Colonial Question.
Bryce, American Commonwealth.
Curtis, History of the Constitution of the United States.
Cooley, Principles of Constitutional Law.

5. Criminal Law, Jurisprudence and Political Science.

Stephens, History of the Criminal Law.
Blackstone, Vol. IV.
Harris, Principles of Criminal Law.
Pike, History of Crime.
Holland, Elements of Jurisprudence.
Austin, Lectures, omitting chapters on Utilitarianism.
Lorimer's Institutes.
Amos, Science of Law.
Woolsey, Political Science.
Lieber, Political Ethics.
Freeman, Comparative Politics.
Aristotle's Politics, by Jowett.

Faculty of Comparative Medicine and Veterinary Science.

THE PRINCIPAL (*ex-officio*).

Professors :

D. McEACHRAN, F.R.C.V.S., V.S. Edin., D.V.S., Dean of the Faculty.
M. C. BAKER, D.V.S.
CHARLES McEACHRAN, D.V.S., Registrar of the Faculty.

Associate Professors :

G. P. GIRDWOOD, M.D.
GEO. WILKINS, M.D.
D. P. PENHALLOW, B.Sc.
WESLEY MILLS, M.A., M.D., D.V.S.
A. D. BLACKADER, B.A., M.D.
J. G. ADAMI, M.A., M.D. [Cantab.].

Lecturers :

N. D. GUNN, M.D.
C. F. MARTIN, B.A., M.D.

Examiners :

The Professors and Associate Professors, together with the following gentlemen nominated by the Provincial Government :

J. A. COUTURE, D.V.S., 49 Garden Street, Quebec.
A. McCORMICK, D.V.S., Ormstown, P.Q.
A. W. HARRIS, D.V.S., Ottawa, Ont.
JOHN M. PARKER, D.V.S., Haverhill, Mass.
FRANK MILLER, V.S., New York.
A. W. CLEMENT, D.V.S., Baltimore, Md., U.S.

Matriculation Examiner.—A. N. SHEWAN, M.A., Lansdowne School, Montreal.

SESSION 1897-98.

The eighth Session of the Faculty (being the thirty-second of the Montreal Veterinary College) will be opened on Wednesday, 22nd September, 1897, by an introductory lecture, at 8 p.m., in the lecture-room of the Faculty, No. 6 Union Avenue. The regular course of lectures will begin on the following day, and will continue till the end of March. The hours of lectures will be announced later, together with any alterations

which may be necessary, the course as herein announced being subject to such changes as the Faculty may see fit to make.

The Montreal Veterinary College was inaugurated in 1866.

The complete course of study in this Faculty extends over three years. Graduates of recognized Medical Colleges are allowed to present themselves for examination after regular attendance on one full course ; graduates of recognized Agricultural Colleges in which Veterinary Science constitutes a branch of study, after regular attendance for two full courses.

Allowances will be made to students of Human or Comparative Medicine, or others who can produce certified class tickets for attendance on any of the subjects embraced in the curriculum from any recognized college or university.

Graduates and students who avail themselves of the above privileges will nevertheless be required to pass an examination in the subjects comprised in the three years' course, unless, from satisfactory evidence otherwise produced, the examiners consider it to be unnecessary.

Graduates of recognized Veterinary Colleges desirous of taking the degree may do so by attendance on the final subjects for one full session, but will be required to pass the examinations on all the subjects embraced in the curriculum, botany excepted.

Occasional and agricultural students will be received without matriculation for attendance on any particular series of lectures. Such students will not be examined, nor will they be entitled to receive class certificates except as occasional students, nor will such attendance be accepted should the student subsequently wish to become a regular student of the Faculty.

MATRICULATION.

Every student, previous to his admission, must produce a certificate of educational acquirements satisfactory to the Faculty, or submit himself to a matriculation examination in (1) writing, (2) reading aloud, (3) dictation, (4) English grammar and (5) compo-

sition, (6) outlines of geography, with special reference to North America, (7) arithmetic, including vulgar and decimal fractions.

NOTE.—It is contemplated to add the rudiments of Latin to the matriculation in the near future.

A. N. Shewan, M.A., will hold the matriculation examination on Saturday, 18th September, 9 a.m., at the College, 6 Union Avenue, when all those intending to enter the course should present themselves for examination. Candidates possessing certificates of education or of previous matriculation should produce them for the inspection and approval of the examiner. Graduates of any Faculty in a recognized University or Agricultural College are not required to matriculate.

No College is recognized unless its students are required to matriculate.

REGISTRATION AND PAYMENT OF FEES.

The following are the College regulations :—

All students desirous of attending the classes shall, at the commencement of each session, enrol their names and residences in the register of the Faculty, and procure from the Registrar a ticket of registration, for which each student shall pay a fee of $5.

The said register shall be closed on the last day of October in each year. The fees are payable to the Registrar, and all class tickets will be issued by him, *and must be paid in advance* at the time of registration ; the registrar will on no consideration issue tickets till the fees are paid. Intending students must govern themselves accordingly.*

All students must register, including those who receive free bursaries.

Fees for the whole course are $75 per session, and, in all cases, must be paid on entering. Matriculation fee, $5, which is to be paid prior to the examination ; $5 for registration, and $5 for re-registration, payable at the beginning of each of the following two Sessions, and $20 on receiving the diploma. Students who are allowed time for previous study will be required to pay full fees, and $5 for registration each session. Payments must be made in all cases as above.

In addition to the above Faculty fees, every undergraduate must pay an annual fee of $2 for maintenance and use of college grounds.

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*Owing to losses incurred by non-payment of fees, the Registrar must refuse registration till the fees are paid, which may be returned if the applicant fails to matriculate

STUDENTS OF THE PROVINCE OF QUEBEC.

In consideration of the annual grant, the Council of Agriculture has the privilege of sending thirteen pupils, free of expense, to the whole course; such students, however, pay a fee of $5 for the course in Botany, $5 annually for registration, and $2 annual grounds fee. These Bursaries may be obtained by young men resident in the Province of Quebec, by application made to the Dean of the Faculty in the handwriting of applicants, accompanied by a recommendation from the Agricultural Society of the district in which they reside, provided the Council considers them qualified by education and in other respects for entering the College.

In all cases, except when specially arranged, Bursars will be required to give a guarantee that they will attend three Sessions, and failing to do so, they shall be required to pay the fees for the Sessions which they have attended. These Bursaries are not intended for nor will they be given to such students as do not require such aid.

GENERAL REGULATIONS.

Students of this Faculty will be graded as of the first, the second, and the final year. In each year students will take the studies fixed for that year only, unless by special permission of the Faculty.

Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such, and shall obtain a ticket or tickets for the class or classes they desire to attend.

All Students shall be subject to the following regulations as regards attendance and conduct :—

A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations; and the Faculty shall, after examination of such class-book, decide which Students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

Punctual attendance on all the classes proper to his year is required of each Student. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing

improper conduct in the Class-rooms, or elsewhere in the building, will admonish the Student, and, if necessary, report him to the Dean.

When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honors, suspend from classes, or report to the Corporation for expulsion.

Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

All cases of discipline involving the interest of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

The College year shall be divided into two terms, the first extending to the Christmas vacation, and the second from the expiration of the Christmas vacation to the 30th March following.

Each lecture shall be of one hour's duration, but the Professors shall have the right to substitute an examination for any such lecture.

At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors and such other examiners as may be appointed by the Corporation. The results shall be reported as early as possible, to the Faculty.

The students have all the privileges of the McGill Medical Faculty's Laboratories which are thus described in their annual calendar :—

PHYSIOLOGICAL LABORATORY.

The Physiological Laboratory, which is situated on the ground floor, is supplied with the most modern apparatus for the practical teaching of this most important branch of the medical curriculum. It contains, amongst other valuable instruments : kymographs, various manometers, etc., for demonstrating blood pressure ; myographs, rheocords, moist chambers, etc., and various electrical appliances for demonstrating experiments in connection with nerve and muscle ; special apparatus for illustrating various points in respiration ; apparatus specially suitable for demonstrating the processes of digestion, as well as the chemical composition and nature of the secretions, and the chief constituents of the tissues and nutritive fluids. The laboratory is arranged in such a way as to permit of Students assisting at, and taking part in, these demonstrations. During the past session, important additions of apparatus have been made to the Physiological Laboratory.

CHEMISTRY.

The course in chemistry embraces Chemical Physics, in the first portion of the course, the theory of Chemistry, both inorganic and organic, in the latter part of the course. The Chemical Laboratory, which is available to the Students of Comparative Medicine, is large, lofty and well lighted, and can accommodate comfortably 76 men at one time. Each Student, when entering on his course, has a numbered table in the laboratory assigned to him for his use during the session. Each table has its own gas and water fixtures, and is provided with shelves for its corresponding set of reagent bottles, as well as a drawer and locker containing a modern set of chemical apparatus especially adapted for the work. This apparatus is provided by the Professor of Chemistry, and supplied to each Student without extra charge. The Student is required to pay only for apparatus broken or destroyed.

The laboratory is furnished with a large draught closet for ventilation, sulphuretted hydrogen apparatus, gas and combustion furnaces, etc., giving to the student unsurpassed advantages for acquiring a sound and practical knowledge of medical chemistry.

PATHOLOGICAL LABORATORY.

In the Pathological Laboratory accommodation will be provided for Students or practitioners who desire to carry on advanced study or private pathological research. The laboratory has been entirely re-built recently, and is well stocked with the usual apparatus for pathological and bacteriological work.

The demonstrations in Morbid Anatomy will be given in a small laboratory, specially arranged for the work. The classes in Pathological Histology will be held in the Pathological Laboratory.

Through the generosity of Mr. J. H. R. Molson, the large house previously occupied by Professor Harrington has been converted into a Pathological Laboratory, having on the upper floor the Class and Demonstration room, capable of holding practical classes of fifty students. This is fully fitted with microscopes and other apparatus for the purpose of Pathological Histology and Bacteriology. Upon the first floor are the Library and Professor's room, the Preparation and Research rooms, with a smaller Incubator room for Bacteriological use. On the ground floor are situated the animal and store rooms and the apartments of the assistant.

Accommodations will be provided for students or practitioners who desire to carry on advanced study or pathological research.

HISTOLOGICAL LABORATORY.

The Histological Laboratory is a large, well-lighted room on the second floor. It is so arranged that over eighty students can be present at the microscopical demonstrations. For this purpose it is supplied with thirty-five microscopes, all from the well-known makers, Zeiss, Hartnock and Leitz. From the large number of microscopes employed, students will have special facilities in studying and making themselves thoroughly acquainted with the specimens that are the subjects of demonstration.

PRACTICAL MICROSCOPY.

This is an entirely optional course, in charge of Prof. Wilkins, assisted by Dr. Gunn. It is intended especially for teaching the technique of Microscopy. Students will be shown how to examine blood, etc., also to cut, stain, and mount specimens. For this purpose, they will have furnished them normal structures, with which they will be able to secure a cabinet of at least 100 specimens, which will be of great benefit when in practice. Reagents and everything, except cover glasses and cabinet cases, provided. Fee, $8.

COURSES OF LECTURES.

BOTANY.

D. P. Penhallow, M.A.Sc.

The course in Botany is designed to give Students a thorough grounding in the general morphology of plants and ability to determine species. It includes a practical study of the Spermaphytes and Pteridophytes during the first half of the session, and after Christmas a Course of lectures on general Morphology, together with a special discussion of plants possessing poisonous properties, and therefore liable to produce injury to grazing animals.

The Morphological Laboratory is well equipped with efficient dissecting microscopes, while the Botanic Garden and Herbarium afford an ample supply of fresh and dried material.

ZOOLOGY.*

W. E. Deeks, B.A., M.D., Lecturer.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples, and by the collections in the Peter Redpath Museum. It affords suitable preparation for

* Students may either take Botany or Zoology, but must intimate at the beginning of the Session their choice, and adhere to this, except by special permission of the Faculty. Students desiring to attend both subjects in one session may do so by permission of the Faculty.

collecting in any department of Canadian Zoology or Palaeontology, and as an introduction to Comparative Physiology.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum, and to the Museum of the Natural History Society of Montreal.

It is optional with students to select either the course on Botany or on Zoology.

CHEMISTRY.

GILBERT P. GIRDWOOD, M.D.

Inorganic Chemistry is fully treated; a large portion of the course is devoted to Organic Chemistry and its relations to Medicine. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to members of the Class to repeat experiments performed during the course, under the superintendence of the Professor or his Assistant.

PHYSIOLOGY.

T. WESLEY MILLS, M.A., M.D., D.V.S.

The purpose of this Course is to make students thoroughly acquainted, so far as time permits, with modern Physiology, its methods, its deductions, and the basis on which the latter rest. Accordingly, a full course of lectures is given, in which both the Physical and the Chemical departments of the subject receive attention.

In addition to the use of diagrams, plates, models, etc., every department of the subjects is experimentally illustrated. The experiments are free from elaborate *technique*, and many of them are of a kind susceptible of ready imitation by the student.

Laboratory work for Senior Students :—

(1) During a part of the Session there will be a course on Physiological Chemistry, in which the student will, under direction, investigate food-stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided.

(2) The remainder of the Session will be devoted to the performance of such experiments as are unsuitable for demonstration to a large class in the lecture room and such as require the use of elaborate methods, apparatus, etc. The course for first year students is similar to that for senior students, though less advanced, and more attention will be given to the anatomico-physiological aspects of the subject than to the chemical.

HISTOLOGY.

GEO. WILKINS, M.D.

This will consist of a course of ten lectures and twenty-five weekly demonstrations with the microscope. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

COMPARATIVE PATHOLOGY.

J. G. ADAMI, M.D., Professor.
C. F. MARTIN, M.D., Lecturer.

The teaching in Pathology at McGill Medical College includes courses in general and special Pathology, in Bacteriology (held during the summer Session), and instruction in the performance of Autopsies. These courses—while directed especially towards giving to the Students a due knowledge of the causation and course of disease in man—are necessarily based largely upon the results of observations upon the lower animals, and the greater part of all these causes is applicable equally to conditions obtaining in the domestic animals. There is in addition a practical course of Pathological Histology for Students of Comparative Medicine, and instruction is given upon the performance of Autopsies upon the lower animals.*

MEDICINE AND SURGERY.

D. MCEACHRAN, F.R.C.V.S.

Students of all years must attend.

The course embraces the principles and practice of Veterinary Medicine, including the diseases of domestic animals, their nature, causes, symptoms, and treatment. It necessarily includes Pathology and Pathological Anatomy, with daily clinical demonstrations in the hospital and the yard practice of the College, as well as illustrations from plates, preserved specimens, and fresh material furnished by the Pathologist.

The course on Surgery embraces Surgical Anatomy and Practices of Surgery, and will be illustrated by a large collection of surgical appliances.

* Undergraduates in the second and third sessions are particularly recommended to take the practical course in Bacteriology during the summer session, if possible.

The large and varied practice of the College furnishes abundance of cases for demonstration purposes. Attendance and practical work in the Pharmacy and Hospital is compulsory during the entire course, in the order arranged at the beginning of each Session, and forms an important part of the qualifications for graduation.

ANATOMY.

M. C. Baker, D.V.S.

In this course the Anatomy of the horse is the subject of special study, while the structural differences of all the domestic animals are carefully explained and illustrated by fresh subjects. There is a very large collection of anatomical models by Dr. Auzoux, of Paris, natural injections and dissections, and a most complete collection of diagrams, including Marshall's complete set, Mons. Achille Compte's Anatomical and Zoological series, also a large collection of drawings specially prepared for the school by Mr. Scott Leighton, artist, Boston, and Mr. Hawksett, Montreal.

The dissecting room is open at all hours, subjects are easily procured, and either the Professor or Demonstrator will be in attendance to superintend and direct students in practical dissection. The room is furnished with every convenience, is thoroughly lighted, and affords students all that can be reasonably desired.

Students are required to pay for the material necessary for practical anatomy.

Before a student can be allowed to present himself for his pass examination, he must produce tickets certified by the demonstrator that he has dissected two entire subjects, —that is, one each session

MATERIA MEDICA AND THERAPEUTICS.

A. D. Blackader, M.D., Professor.
Neil Gunn, M.D., Lecturer.

This course comprises a description of the physiological and therapeutic action of all the more important medicines used in Veterinary Practice, with a short reference to their general properties and principal preparations. It will also include a course in the practical work of compounding and administering medicines in the pharmacy and hospital. There will also be experimental demonstrations of the action of some of the more important drugs on animals .

CATTLE PATHOLOGY AND OBSTETRICS.

C. McEachran, D.V.S.

A special course on Cattle Diseases and Veterinary Obstetrics will be delivered, embracing the history of Cattle Plagues : their nature, symptoms, pathological anatomy, prophylactic and therapeutic treatment ; breeding and general management of breeding animals, disease incident to gestation and parturition, etc.

SPECIAL COURSE ON DOGS.

Professor Wesley Mills will give a special course on Dogs, which will include :—

(1.) Lectures on the physical and psychic characteristics of all the leading varieties, illustrated by specimens from his own kennels and other sources, as well as by plates, etc.

(2.) The principles of training ; the feeding and general management of dogs.

(3.) The principles of breeding ; the management of brood bitches and the rearing of puppies.

(4.) Bench show management and the public judging of dogs.

(5.) The rights and duties of dog owners.

In all the above courses the clinical and pathological aspects of the subjects will be considered, as well as the normal.

THE MUSEUM.

Contains a large collection of natural and artificial specimens, consisting of skeletons of almost all the domestic animals, numerous specimens of diseased bones, preparations by Dr. Auzoux of all the different organs in the body, natural dissections, colored models, diagrams, etc., etc., all of which are used in illustrating the lectures, and to which the Students have frequent opportunities of referring. Students will also enjoy the privileges of the Museum of the Medical Faculty of McGill University, which is rich in pathological specimens.

THE PHARMACY.

All the medicines used in the practice of the College are compounded by the Students, under the direction of the Professors, from prescriptions for each particular case, and most of them are administered or applied by them. For this purpose they are detailed for certain pharmaceutical duties alternately. By this means they become familiar with the physical properties, compatabilities, doses and uses of the medicines, and become expert in administering them to the different patients brought for treatment. Attendance and practical work in the Pharmacy are compulsory.

THE PRACTICE.

The Hospital and Daily Clinics, as well as a very extensive outdoor practice, including most of the largest stables in the city and numerous farms in the vicinity, afford excellent opportunities for clinical observation on horses of all breeds and ages. Owing to the numbers of cattle kept in the city, and the valuable thoroughbred herds in the neighborhood, advanced Students are enabled to see and do considerable cattle practice. The dog practice is the largest in Canada. All canine diseases can be studied clinically, owing to the large number of dogs brought to the College for medical or surgical treatment.

Senior Students will be appointed to act alternately as dressers in the Hospital, and first and second year men must assist in administering medicines and at operations.

*TEXT BOOKS.

The following text books are recommended :—

Anatomy.—Chauveau's Comparative Anatomy ; Strangeway's Veterinary Anatomy ; McFadyean's Veterinary Anatomy ; Dissector's Manual, Clement.

Physiology.—Physiology for Beginners by Foster and Shore ; Prof. Mills' Text Book of Comparative Physiology ; Class Laboratory Exercises by the same author.

Histology.—Klein's Elements ; Schafer's Essentials of Histology.

Botany.—Gray's Structural Botany ; Bessey's Botany.

Zoology.—Dawson's.

Chemistry..—Wurtz's Elementary Chemistry ; Armstrong ; Remsen's Organic Chemistry.

Medicine and Surgery.—Williams' Principles and Practice of Veterinary Medicine ; Fleming's Sanitary Science and Police ; Williams' Surgery ; Fleming's Operative Surgery ; Robertson's Equine Medicine ; Liautard's Operative Veterinary Surgery ; Zuill's Translation of Friedberger and Fröhner's Pathology, etc.

Materia Medica.—Dun's Veterinary Medicines ; Walley's Veterinary Conspectus ; Tuson's Pharmacy ; Hoare's Therapeutics.

Cattle Diseases.—Steel's Bovine Pathology ; Clatter's Cattle Doctor (Armitage) ; Fleming's Veterinary Obstetrics.

Canine Diseases.—Prof. Mills' The Dog in Health and in Disease.

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*Students are advised not to buy text books extensively till after consulation with the Professor who teaches the subject.

Diseases of the Dog.—Geo. Müller, tr. by A. Glass, V. S.

Entozoa.—Cobbold's Entozoa of Domestic Animals.

Pathology.—Payne's Pathology ; Fraenkel's Bacteriology ; Clement on Post Mortems.

BOARD AND TRAVELLING EXPENSES.

Board can be obtained at from $15 to $20 per month.

For notice of McGill Students' Club, see "University Societies."

By the kindness of the Railway Companies, certified students of the College will be granted return tickets from Montreal to any part of their lines at greatly reduced rates, the said tickets to hold good from the close of one session to the beginning of the next.

Return tickets will also be granted for the Christmas vacation.

VETERINARY MEDICAL ASSOCIATION.

This Association is for the mutual improvement of its members in all matters pertaining to the profession.

Graduates and students of Veterinary Medicine and graduates and students of Human Medicine are eligible to membership.

The meetings are held fortnightly, at which papers are read and discussed, cases reported, etc.

The advantages which students derive from these meetings are very great. Not only do they hear carefully prepared papers on subjects of professional importance, but an opportunity is afforded for practising public speaking, which in after life is often extremely useful. The fees of the Association are expended in the purchase of books for the Library, drugs for experimental purposes and the prizes awarded for papers read.

The Library is owned by the Association, and is under the control of officers who are elected annually. It contains nearly 600 volumes, embracing works of great antiquity, as well as the modern works on Veterinary Science and collateral subjects, in both the English and French languages, all of which are available for consultation and study by members.

Every student is expected to become a member. The entrance fee is $5, and the yearly subscription $2.50. A Diploma of Honorary Fellowship is conferred on all members who have complied with the regulations of the Association.

ASSOCIATION FOR THE STUDY OF COMPARATIVE PSYCHOLOGY.

This Society is similar in constitution to the Veterinary Medical Association, and has a special library of about 100 volumes. Its object is the study of the Psychic Phenomena (intelligence, etc.) of all

classes of animals, and the diffusion of sounder views on this subject. Naturally, it is of great importance in the practice of medicine upon dumb animals as well as of peculiar scientific interest.

DONATIONS.

John Wesley Gadsden, M.R.C.V.S., of Philadelphia, Penn., U.S.A., has generously donated to this Faculty his valuable library of nearly 400 volumes and the specimens of his private museum, many of which are of unusual value.

QUALIFICATIONS FOR THE DEGREE.

Candidates for the Final Examination shall furnish testimonials of attendance on lectures on the following subjects :—

Either Botany or Zoology—One course of six months, 1st year.

Histology, Chemistry, Physiology, Anatomy, } Two courses of six months, 1st and 2nd years.

General Pathology and Demonstrations, one course of six months.

Cattle Diseases and Obstetrics, Practice of Medicine and Surgery, Materia Medica and Therapeutics, } Two courses, 2nd and 3rd years.

No one will be permitted to become a candidate for examination who shall not have attended at least one full course of lectures in this Faculty, including all the subjects embraced in the curriculum. Courses of less length than the above will be received only for the time over which they have extended.

Students, except by special permission of the Faculty, must pursue the subjects of Anatomy, Physiology, Chemistry, Histology and Botany or Zoology in their first session.

Candidates of the 1st and 2nd years, who fail to pass in not more than two subjects, may be granted a supplemental examination at the beginning of the following session. Supplemental examinations will not be granted, except by special permission of the Faculty and on written application stating reasons, and on payment of a fee of $2, which must be paid prior to examination.

Candidates who fail to pass in a subject of which two courses are required may, at the discretion of the Faculty, be required to attend a third course, and furnish a certificate of attendance thereon.

In addition to the written and oral examinations, candidates must pass a practical clinical test, including examination of horses for soundness, written reports being required ; the clinical reports to include diagnosis, prognosis, and treatment.

The following oath or affirmation will be exacted from the candidate before receiving the degree :—

DECLARATION OF GRADUATES IN COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

I, —— ——, promise and solemnly declare that I will, with my best endeavors, be careful to maintain the interests of this University, and that, to the best of my ability, I will promote its honor and dignity.

EXAMINATIONS.

First Year.—Pass Examinations in Botany or Zoology, Histology (oral), 1st Chemistry, Anatomy, Physiology, and on all other subjects in the course of this year.

Second Year.—Pass Examinations in Chemistry, Physiology, Histology (written) and Anatomy, in addition to sessional examinations in these and the other subjects of the year.

Third Year.—Pass Examinations in Practice of Medicine and Surgery, General and Special Pathology, Veterinary Obstetrics, Diseases of Cattle, and Materia Medica and Therapeutics.

N.B.—Written and Oral Examinations will be held from time to time during the session, and attendance at these is compulsory. The standing attained at these examinations will be taken into account at pass examinations.

AGE FOR GRADUATION.

Students under seventeen will be received as apprentices, but cannot be entered as regular Students before attaining that age.

Minors may pass the Examinations, but cannot receive the Diploma until they are twenty-one years of age.

REGULATIONS GOVERNING THE CONFERRING OF THE DEGREE UPON FORMER GRADUATES OF THE MONTREAL VETERINARY COLLEGE.

The Degree of Doctor of Veterinary Science may be conferred on former graduates of Montreal Veterinary College at any Convocation of McGill University held for conferring degrees, subject to the following regulations, which were adopted at a meeting of the Corporation of McGill University, held on the 22nd January, 1899, governing the conferring of Degrees on former graduates :

1st.—That the candidate must be found to have conducted himself throughout his professional career with honor and integrity.

2nd.—That he has not been connected with the manufacture or sale of proprietary medicines.

3rd.—That he has been engaged in actual practice for at least one year since graduating, or that he has been engaged in professional study at some European school.

4th.—That he shall be required to satisfy the Board that he has made reasonable progress in professional knowledge and skill.

In estimating the fitness of a candidate for a degree, account will be taken specially of work done in professional teaching, original research, publication of books or contributions to the journals of the profession.

The fee for the Diploma shall be Twenty Dollars.

An affirmation shall be administered similar to that of other Faculties, and in English.

The Degree may be conferred on absentees.

The regulations relating to fees and affirmations shall apply to ordinary undergraduates on taking the degree.

Graduates intending to apply for the Degree of D.V.S. should notify the Registrar of the Faculty at their earliest convenience, and at the same time state the grounds explicitly on which they base their claims for the Degree.

HINTS TO STUDENTS.

The Matriculation Examination which you have to undergo is by no means a severe one, and if you are not prepared to pass it you should begin at once to improve your education.

You had better not commence professional reading till you have become familiar with the fundamental subjects. Practice, unless under the guidance of a thoroughly educated practitioner, is more likely to mislead than aid you.

It is advisable that you should arrive in Montreal before the opening day, in order to procure suitable lodgings. Endeavor by all means to be present at the introductory lectures on all subjects; you cannot miss one lecture without thereby losing valuable preparatory information. Come prepared to procure at once the necessary text books and note books. Make your arrangements so as to enable you to devote your entire time and undivided attention to your studies, as the three sessions which the curriculum covers will be found none too long to accomplish the necessary proficiency in the various branches of study required of you. The McGill Y. M. C. A. and the McGill Students' Club are especially recommended to you.

NOTICE TO GRADUATES.

For the purpose of increasing pathological material for the classes, graduates are earnestly requested to send any interesting or obscure pathological specimens which may be met within their practice, to the Pathological Laboratory, McGill Medical College. The specimens may be sent C.O.D. by express, and will in all cases be ac-

knowledged. It is suggested that where reports are desired those reports can be satisfactory only when the material arrives in the freshest possible condition. It is urged, therefore, that when forwarded in bottles the tissues be placed immediately either in alcohol, fifty to seventy-five per cent., or in a mixture of equal parts of glycerine and water to which five per cent. of pure carbolic acid has been added. If dry carriage be preferred the method of surrounding the tissues with a cloth well moistened with one in one thousand corrosive sublimate solution, and wrapping this securely in oiled silk, is recommended. A report upon the nature of the specimen will be sent if desired, and the specimens, when of sufficient interest, will be preserved in the Museum with the names of the donors affixed.

STUDENTS' MEETINGS.

The use of the lecture room or other rooms of the College, for holding students' meetings, can be obtained by application to the Dean, stating the object of the meeting, and he may attend personally or appoint someone to represent the Faculty at said meeting. It is strictly forbidden to hold meetings for the discussion of any subject not approved by the Faculty, and students holding such meetings except as above will be dealt with by the Faculty as it may see fit.

McGill Normal School.

The McGill Normal School, in the city of Montreal, is established chiefly for the purpose of training teachers for the Protestant population, or for all religious denominations of the province of Quebec, other than the Roman Catholic. The studies in this school are carried on chiefly in English, but French is also taught.

Government of the School.

The Corporation of McGill University is associated with the Superintendent of Public Instruction in the direction of the McGill Normal School, under the regulations of the Protestant Committee of the Council of Public Instruction, and it is authorized to appoint a standing committee consisting of five members, called "The Normal School Committee," which shall have the general supervision of the affairs of the Normal School. The following members of the Corporation of the University constitute the committee of the Normal School for the Session of 1897-98.

NORMAL SCHOOL COMMITTEE.

Prof. Wm. Peterson, M.A., LL.D., Principal of the University, *Chairman*.
Mr. Samuel Finley, Mr. George Hague, } Governors of McGill College.
J. R. Dougall, M.A., Rev. Principal MacVicar, D.D., LL.D., } Fellows of McGill University.
J. W. Brakenridge, B.C.L., *Acting Secretary*.

OFFICERS OF INSTRUCTION.

McGill Normal School.

Sampson Paul Robins, M.A., LL.D., *Principal and Ordinary Professor of Mathematics and Lecturer on Art of Teaching.*

Abner W. Kneeland, M.A., B.C.L., *Ordinary Professor of English Language and Literature.*

MADAME SOPHIE CORNU, *Professor of French.*
MISS GREEN, *Professor of Drawing.*
MR. R. J. FOWLER, *Instructor in Music.*
MISS LILIAN B. ROBINS, B.A., *Assistant to the Principal and Instructor in Classics.*
MR. W. H. SMITH, *Instructor in Tonic Sol-Fa.*
MR. JNO. P. STEPHEN, *Instructor in Elocution.*
PROF. D. P. PENHALLOW, M.A.Sc., *Lecturer in Botany.*
T. D. REED, M.D., C.M., *Lecturer in Physiology and Hygiene.*
NEVIL N. EVANS, M.A.Sc., *Lecturer in Chemistry.*

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

ORRIN REXFORD, B.A.Sc., *Head Master of Boys' School.*
MISS MARY J. PEEBLES, *Head Mistress of Girls' School.*
MISS SELINA F. SLOAN, *Head Mistress of Primary School.*

ANNOUNCEMENT FOR THE SESSION 1897-98.

This Institution is intended to give a thorough training to teachers, by instruction and training in the Normal School itself and by practice in the Model Schools ; and the arrangements are of such a character as to afford the greatest possible facilities to students from all parts of the province. Hereafter the Protestant Central Board of School Examiners for the Province of Quebec will grant diplomas only to teachers-in-training of this institution, and to graduates of British and Canadian Universities.

The forty-second session of this School will commence on the first of September, 1897, and close on the thirty-first of May, 1898. The complete course of study extends over four years, and the Students are graded as follows :—

1.—*Elementary School Class.*—Studying for the Elementary School Diploma.

2.—*Model School Class.*—Studying for the Model School Diploma.

3.—*Academy Class.*—Studying for the Academy Diploma.

All the following regulations and privileges apply to male and female students alike.

I. TERMS OF ADMISSION.

(Arranged from the Regulations of the Protestant Committee of the Council of Public Instruction.)

Any British subject who produces a certificate of good moral character from the minister of the congregation to which he belongs, and evidence to show that he has completed the sixteenth year of his age, and has passed the examinations of Grade II. Academy, or has received an Elementary School Diploma, shall be admitted into the Elementary School Class at the beginning of the Session. If he has completed his seventeenth year, has passed the A.A. examinations, and has a sufficient acquaintance with conversational French, or holding an Elementary School Diploma, passes a satisfactory examination in Algebra, Geometry and French before the Principal of the Normal School, or holds a Model School Diploma, he shall be admitted to the Model School Class.

In exceptional cases the Principal may admit candidates to either class on the result of equivalent examinations held by himself, or by his delegates, at the beginning of the Session only. For the present year, by permission of the Protestant Committee of the Council of Public Instruction, he will exempt from examination for admission to the Elementary School Class all candidates who, being out of reach of Academies, present certificates of having passed in Grade III. Model.

Candidates shall be admitted to examination for entrance only at the times regularly appointed by the Principal of the School at the beginning of the session. (*See Note b.*) Candidates exempt from examination can only be admitted during the first week of the session to the full course of the Elementary School Class or to the Model School Class.

At the beginning of each session the Principal of the Normal School may admit to the classes on trial persons whose qualification may be insufficient for entrance. Such persons may be excluded from the School by the Principal, whenever he may judge it best so to do; but none shall be permitted to remain on trial after the semi-sessional examinations.

At the close of the Christmas vacation, January 5th, 1898, holders of Elementary Diplomas and all persons who may be authorized so to do by the Central Board of School Examiners, may enter the Normal School for the short course of training now provided by the Protestant Committee of the Council of Public Instruction. This course lasts through the four months of January, February, March and April, terminates with an examination in purely professional subjects, and leads, if satisfactory reports of skill in teaching and in discipline be received from the Model Schools, and if the terminal examination be good, to an Elementary Diploma from the Normal School.

II. PRIVILEGES OF TEACHERS-IN-TRAINING.

All teachers-in-training who do not reside at home with their parents or guardians during their attendance at the school are entitled to free tuition.

At the close of the semi-sessional examinations, the sum of $420 from the bursary fund will be divided among the forty most successful pupils who do not reside at home with their parents or guardians during their attendance at the school. Similarly, the sum of $800 will be divided at the close of the sessional examinations. The remainder of the bursary fund will be divided as an allowance for travelling expenses among teachers-in-training residing in the province of Quebec, at a distance of more than ninety miles from Montreal, in a proportion determined by the excess of distance above ninety miles, it being provided that no allowance for travelling expenses shall exceed ten dollars.

All teachers-in-training who pass the semi-sessional examinations in the Normal School with 60 per cent. of the total marks, and who have not fallen below 50 per cent. in any one of the groups of subjects, English, Mathematics, French and Miscellaneous, nor in any one of the subjects required by the official course of study for the schools in which they would be authorized to teach by the diplomas to which they aspire, shall be entitled to continue in their classes after Christmas Except by the special permission of the Principal, none other

shall be entitled to this privilege nor to a share in the Christmas bursary.

All teachers-in-training, who attain the standards defined above at the final examinations of the Normal School, shall be entitled to Advanced Elementary Diplomas in the Elementary School Class and to Model School Diplomas in the Model School Class ; and without the concurrence of the Principal of the school and the professor of any subject in which there has been failure, none others shall receive diplomas or share in the bursary fund. Such holders of Advanced Elementary School diplomas as have taken not less than 75 per cent. of the total marks, nor less than 60 per cent. of those in any subject essential to the diploma, shall be entitled to admission among the "selected students" mentioned in the following Section, but others may be so admitted by the Principal. (*See Note d.*)

III. STUDENTS FOR THE ACADEMY DIPLOMA.

The Academy Class in the Normal School being now instructed in the University, Academy Diplomas in course are no longer given by the McGill Normal School. But, under the regulations cited below*, Academy Diplomas are granted to holders of Model School Diplomas from the Normal School, who become undergraduates of the Universities.

1. The Normal School shall bring up selected students at the end of the Model School year, to the examinations for the entrance into the first year of the Faculty of Arts in the Universities. They may be examined either at the examinations for the Associate in Arts in June, or at those for the matriculation in the autumn, and shall take the full course of study in the first and second years.

2. Such students shall be enrolled in the Normal School as students of the Academy Class, and shall be under the usual pledge to teach for three years. They shall engage in the practice of teaching at such times and in such schools as may

* These regulations are under revision, and are likely to be much modified at the close of this session.

be arranged by the Principal from time to time, in consistence with their college work, and shall be under the Principal and the regulations of the Normal School.

3. On report of the colleges which such students may be attending, that they have passed creditably in the Christmas and sessional examinations respectively, they shall be entitled to bursaries, not exceeding thirty dollars per session, in aid of fees and board. Such bursaries may be paid by the Normal School Committee out of any fund available for the purpose.

4. On passing the intermediate, or equivalent, examinations of the Universities, such students will be entitled to receive Academy diplomas, in accordance with the regulations of the Protestant Committee of the Council of Public Instruction for such diplomas.

5. Such students may, with the advice of the Principal, attend classes at McGill or its affiliated colleges, or at Bishop's College.

6. It shall be competent to the Principal of the Normal School to provide any tutorial assistance that may in his judgment be necessary for Academy students. Also, it shall be his duty in the case of optional studies to select for the students those required for the curriculum of the Normal School.

7. It shall be competent for students who have taken Academy Diplomas as above, to continue for two years longer at the University, or to return thereto, after teaching for a time, in order to take the degree of Bachelor of Arts ; but they shall be held bound to fulfil their engagements to teach, and they shall not be entitled to bursaries.

Holders of Model School Diplomas of the McGill Normal School who are certified by the Principal of the Normal School to have taken 75 per cent. of the total marks at their final examinations, with not less than 60 per cent. of the marks in Mathematics, French, Latin and Greek, respectively, will be admitted without further examination to the first year in Arts of the McGill University, but all such students must make

good their standing in the University at the Christmas examinations.

Teachers-in-training, who do not attain the standard defined above, must, in order to enter the University, pass the usual examination for Matriculation.

IV. CONDITIONS OF CONTINUANCE IN THE NORMAL SCHOOL.

In order to continuance in the Normal School, teachers-in-training must maintain conduct and character suitable to their present position and their future calling.

Each professor shall have the power of excluding from his lectures any Student who may be inattentive to his studies, or guilty of any minor infraction of the regulations, until the matter can be reported to the Principal. (*See Note c.*)

V. ATTENDANCE ON RELIGIOUS INSTRUCTION.

Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with the request that he will meet weekly with that portion of the teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church, at least once every Sunday.

VI. BOARDING HOUSES.

1. The teachers-in-training shall state the place of their residence, and those who cannot reside with their parents will be permitted to live in boarding houses, but in such only as shall be specially approved of. No boarding houses having permission to board male teachers-in-training will be permitted to receive female teachers-in-training as boarders, and vice versa. (*See Note g.*)

2. They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

3. They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

4. A copy of the regulations shall be sent to all the keepers of lodging houses at the beginning of the session.

5. In case of lodgings being chosen by parents or guardians, a written statement of the parent or guardian shall be presented to the Principal.

6. All intended changes of lodgings shall be made known beforehand to the Principal or to one of the professors.

7. Boarding houses shall be visited monthly by a committee of professors.

8. Special visitations shall be made in case of sickness being reported, either by professors or by ladies connected with the school; and, if necessary, medical attendance shall be procured.

9. Students and lodging house keepers are required to report, as soon as possible, all cases of serious illness and all infractions of rules touching boarding houses.

VII. ACADEMY DIPLOMAS TO GRADUATES.

*Granted under the Regulations of the Protestant Committee of the Council of Public Instruction.**

Graduates in Arts from any British or Canadian University, who have passed in Latin, Greek and French in the Degree Examinations, or who have taken at least second class standing in these subjects at their intermediate Examinations, shall be entitled to receive first class Academy Diplomas, provided that they have also taken a regular course in the Art of Teaching at the McGill Normal School, or other public training institution outside of the Province, approved by the Protestant Committee.

Graduates who have not passed in French, as prescribed above, may, on application, be examined in that subject before the Principal of the McGill Normal School, and, if satisfactory,

* These regulations are under revision, and will doubtless be greatly modified before the next session of the Normal School.

such examination shall be accepted in lieu of the prescribed standing in French in the University examinations.

To meet the requirements of Graduates and Undergraduates in Arts, who, not having previously taken a Normal School course, desire to receive Academy diplomas of the first class under regulation 54, provision has been made for the delivery of a course of forty lectures on Pedagogy in the Normal School and for practice in teaching in the McGill Model School for forty half days, open to Graduates in Arts of any British or Canadian University, to undergraduates of the third year, and with the permission of the Faculty and the concurrence of the Principal of the Normal School, to those of the fourth year.

An examination on this course of lectures is held annually on the 20th day of May, or on the school day next succeeding that date ; the hours are from 10 a.m. to 12 noon.

Undergraduates will be permitted to teach the forty half days referred to above, at times extending over the sessions of the Model School, corresponding to the third and fourth years of their college course. Graduates will be permitted to teach in the Model Schools at such times as may be agreed on with the Principal.

All persons taking this course of study in the Normal School shall be held to be subject to the regulations of the said school, and to be under the supervision of its Principal while in attendance thereat.

Graduates who have taken the above course of study in Pedagogy, and the first class Academy Diploma, may be entered, if so desired by them, in the published lists of the University as holders of such diplomas.

Undergraduates holding Model School Diplomas in course from the McGill Normal School, who take at least second class standing in Latin and Greek in the Intermediate Examination of the Universities, shall be entitled to receive first class Academy Diplomas.

Any candidate who presents to the Principal of the McGill Normal School (*a*) the requisite certificates of age and of

good moral character, according to Form No. 1 below, and (*b*) satisfactory certificates that he has complied with either of the foregoing regulations, shall be recommended by him to the Superintendent of Public Instruction for an Academy Diploma.

FORM OF CERTIFICATE OF CHARACTER TO BE SUBMITTED BY CANDIDATES FOR ACADEMY DIPLOMAS.

"This is to certify that I, the undersigned, have personally known and had opportunity of observing..... for the.....last past; that during all such time *his* life and conduct have been without reproach; and I affirm that I believe *him* to be an upright, conscientious, and strictly sober *man*."

This certificate must be signed by the Minister of the Congregation to which the Candidate belongs, and by two School Commissioners, Trustees or Visitors.

VIII. NOTES ON THE PRECEDING REGULATIONS.

Chiefly extracted from the By-Laws of McGill Normal School.

(*a*) On application to the Principal of the School, candidates for admission will be furnished with forms of application, containing the required forms of certificate of good character and of agreement to teach for three years in some Public School in the Province of Quebec.

(*b*) Teachers-in-training are expected to give their whole time and attention to the work of the school, and are not permitted to engage in any other course of study or business during the session of the school.

(*c*) There shall be no intercourse between male and female teachers-in-training while in school or when going to or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

(*d*) Teachers-in-training who leave the Normal School in the middle of a session are expected to assign to the Principal satisfactory reasons, accompanied, in case of failure of health, by medical certificates.

(*e*) The J. C. Wilson prize of forty dollars and a book, annually chosen by the donor, shall be given to that teacher-in-training of the Elementary School class who passes for a diploma, and takes the highest aggregate of marks at the final examination of the year.

The Prince of Wales' medal and prize shall be given to that teacher-in-training of the Model School class who passes for a

diploma, and takes the highest aggregate of marks at the final examination of the year.

This year His Honor the Lieutenant-Governor of Quebec offers a bronze medal for competition in the Elementary School class, to be awarded to the student showing greatest proficiency in the French language.

His Excellency the Governor-General gives a bronze medal to the student who passes the best final examination in the Art of Teaching, whether in the Elementary or the Model School class.

(*f*) In order to be recognized as teachers-in-training for the Academy Diploma, students who have fulfilled the conditions stated in the regulations of the Protestant Committee of the Council of Public Instruction, must apply at the beginning of each collegiate year to the Principal of the Normal School for enrolment, and for certificates of enrolment to be presented to the Dean of the Faculty of Arts. Having entered college, they must report to the Principal of the Normal School from time to time, as he may require, and must furnish him with certificates of having successfully passed their several examinations, without which certificates, signed by the Dean of the Faculty or his representative, no bursaries shall be paid. It is held that no student who has passed lower than second class in two of the four subjects, Mathematics, Latin, Greek and French, or who has failed in any one of these subjects, has passed "creditably" at any college examination. But in order to secure a first-class Academy diploma and a bursary at the end of the second year, it is necessary to pass in both Latin and Greek not lower than second class at the intermediate examinations. Bursaries not taken at the proper time will not be paid subsequently.

(*g*) No boarding-house is attached to the Institution, but every care will be taken to ensure the comfort and good conduct of the students in private boarding houses approved by the Principal, who will furnish lists to applicants for admission. Board can be obtained at from $12 to $16 per month.

IX. COURSE OF STUDY.

N.B.—The subjoined Course of Study has been designed, and all instruction in it is given with express reference to the work of teaching.

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

Teachers-in-training are admitted to this class after the Christmas vacation on the authority of the Central Board of School Examiners, who take full responsibility for the academic qualifications of those who enter.

Organization and Discipline.—A course of Lectures.

Teaching.—A course of Lectures on teaching English subjects, and one on teaching French.

Model Lessons.—Given by teachers of the Model School staff, to be reported on in detail by teachers-in-training.

Practice Teaching in the Model Schools.—Under supervision of the Model School staff. These lessons are definitely reported by the supervisors.

Model Lessons.—Given by teachers-in-training to their fellow teachers under the supervision of the Normal School staff.

The final examination leading to the Elementary School Diploma will consist of written and oral examinations on the lecture courses, and the reception of the reports on actual school work done by teachers-in-training and observed by the staff of the Normal and Model Schools.

Examination papers will be set only on the lectures given and on school work observed; but the staff of the Normal School will refuse to sign certificates necessary to receiving diplomas if these examinations reveal marked literary deficiencies.

Attendance on some of the lectures given to the Advanced Class will be permitted, especially on those in Elocution, Chemistry, Physiology and Hygiene and Tonic Sol-fa; but examinations in such subjects will not be compulsory.

2. ELEMENTARY SCHOOL CLASS STUDYING FOR THE ADVANCED ELEMENTARY SCHOOL DIPLOMA.

First Term, from September 2nd to December 23rd.

English.—The structure of sentences. Orthography and Orthoepy. The study of Milton's Allegro, and the Sermon on the Mount, Matt. V., VI. and VII.

Geography.—General view of continents and oceans. North and South America. Eléments de Géographie Moderne.

History.—Outline of general history. Histoire du Canada en Français.

Arithmetic.—Simple and compound rules.

Algebra.—The elementary rules.

Geometry.—Elementary notions, with Mensuration.

French.—Darey's Principes de Grammaire Française to page 50, with verbs of first conjugation. Méthode Naturelle. Curtis' Oral Lessons in French.

Latin.—Grammar; a Delectus of Caesar.

Reading and Elocution.

Drawing.—Elements, simple outlines and map drawing

Music.—Vocal music with part songs. Junior Certificate of Tonic Sol-fa College.

Penmanship and Accounts.

SECOND TERM, January 6th to end of Session.

English.—Structure of words and sentences. Etymology, derivation and syntax. Study of Macaulay's Essay on Milton and of Goldsmith's Deserted Village.

Geography.—Contour, elevations, river systems, political divisions and chief cities of the old world.

History.—Outline of general history. Sacred. Histoire du Canada continuée.

Arithmetic.—Fractions, Decimals, Proportion, Interest.

Book-keeping.—Single Entry and Penmanship.

Algebra.—Simple Equations of one unknown quantity, with problems.

Geometry.—First book of Euclid, with deductions.

Art of Teaching.—Lectures on School organization, discipline and instruction.

French.—Principes de Grammaire Française, page 100, with verbs regular and irregular. Méthode naturelle.

Latin.—Grammar; Caesar, Gallic War, Book I.

Chemistry.— Lectures.

Physiology and Hygiene.—Lectures.

Reading and Elocution.

Drawing.—Freehand drawing from the solid, and elements of perspective.

Music.—Elements of vocal music and part songs. Elementary Certificate of Tonic Sol-Fa College.

Practice in Teaching in the McGill Model Schools, as directed by the Principal.

Religious Instruction will be given throughout the Session.

In addition to the text-books named above, each Student of the Elementary School Class must be provided with an Atlas of recent date, an Arithmetic, an Algebra and a Euclid.

3. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

Students entering the School in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without division into terms.

English.—Principles of grammar and composition. Style. History of the English Language. Study of Shakespeare's Tempest, Scott's Lady of the Lake, Tennyson's Lotus Eaters.

Geography.—Mathematical and physical. Use of the globes.

History.—England, Greece.

Art of Teaching.—Lectures on the principles of education, especially on those derived from the physical, mental and moral nature of the child.

Arithmetic.—Commercial Arithmetic, Logarithms, Properties of Numbers.

Book-keeping.—Double Entry and Penmanship.

Algebra.—Equations of more than one unknown quantity, and quadratics.

Geometry.—Second, third and fourth books of Euclid, with application to mensuration.

Botany.—High School Botany, Spotton.

Latin.—Grammar; Virgil, Aeneid, Book I.

French.—Translation from French into English, and from English into French. Darey's Principes de Grammaire. Eléments de Littérature française, Lectures françaises, Méthode Berlitz, Histoire de France.

Agricultural Science.—Principles, especially chemical and botanical, and application to Canadian agriculture.

Elocution.

Drawing.—Elements of perspective, drawing from the cast and map drawing.

Music.—Instrumental music, part songs and rudiments of harmony. Intermediate Certificate of Tonic Sol-Fa College.

Practice in Teaching.—In the McGill Model Schools, as directed by the Principal.

Religious Instruction throughout the Session.

Such students as, from their conspicuous ability and preparation, may be selected to enter the Academy Class of the Normal School, will, in addition to the work given above, read Xenophon, Anabasis, Book I., and Caesar, Bell. Gall., Book II., with special attention to Greek and Latin Grammar.

Other students of exceptional ability may, with the consent of the Principal and Professors of the several subjects, choose one of the following courses of extra study :—

(*a*) Mathematics: trigonometry.

(*b*) Old English.

(*c*) French : classiques français, composition et grammaire.

(*d*) Drawing: water-color.

(*e*) Music: violin.

In addition to the text-books named above, each Student of the Model School Class must be provided with an Arithmetic, an Algebra, a Euclid, and Dawson's Scientific Agriculture.

4. CLASS OF KINDERGARTNERS.

Persons who have taken the Advanced Elementary School Diploma, and have the necessary qualifications, especially love of children, a good voice, musical ability, and an engaging manner, may enter the Training School for Kindergartners, and receive Kindergarten Diplomas at the close of their second year of Normal School training.

Kindergartners will be employed in the practical work of the kindergarten during the forenoon of each school-day, and will follow a selected course of practical and professional training every afternoon.

Among the subjects taken in the afternoons will be mother play, gifts, occupations, clay modelling, nature lessons, games and songs, drawing, music, French, psychology of the child, history of education and art of teaching.

5. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

Will follow two years the course of McGill University and its affiliated colleges, or that of Bishop's College, Lennoxville, being enrolled on the Books of the Normal School, and receiving a bursary from the Normal School, not exceeding $30 per annum, and such tutorial assistance as may be deemed necessary. Such Students must take in their courses such options only as are approved by the Principal of the Normal School.

The course for the current year in the McGill College, and in Bishop's College, may be learned by application to W. Vaughan, Esq., McGill College, Montreal, or to Rev. Principal Adams, D.C.L., Bishop's College, Lennoxville.

SYLLABUS OF LECTURES ON PEDAGOGY.

(Open to Graduates and Undergraduates.)

The Legal Position of the Teacher.

1. The organization of Public Instruction in Quebec. 2. The relation of the teacher to the Department of Public Instruction, and to the Protestant Committee of the Council of Public Instruction. 3. The relation of the teacher to school commissioners and parents. 4. The relation of the teacher to pupils. 5. The teacher as a member of a profession.

Discipline.

6. Discipline as a means of immediate pleasure to pupils. 7. Discipline as tending to school success. 8. Discipline as a preparation for life. 9. Discipline developing character. 10. Discipline enforced by authority.

INSTRUCTION IN SPECIAL SUBJECTS.

11. English reading, writing, grammar. 12. Literature, composition. 13. French. 14. The classics. 15. Number; arithmetic and algebra. 16. Form ; geometry. Number and form ; trigonometry and mensuration. 17. Geography and history. 18. Botany and chemistry. 19. Drawing and music. 20. The acquisition of general knowledge.

PHYSICAL DEVELOPMENT.

21. Health. 22. Growth. 23. The training of the eye. 24. The training of the ear. 25. The training of the hand.

MENTAL DEVELOPMENT.

26. The training of the analytic faculty. 27. Observation and experiment. 28. The training of the synthetic faculty. 29. Understanding. 30. Judgment and reason. 31. Invention. 32. Imagination. 33. Memory of sensations. 34. Memory of conceptions. 35. Verbal memory.

MORAL DEVELOPMENT.

36. Training in truthfulness. 37. In justice and purity. 38. In philanthropy and patriotism. 39. In earnestness. 40. In good manners.

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Boys' School —Orrin Rexford, B.A. Sc., *Head Master.*
Elizabeth Reid, *Assistant.*

Girls' School.—Mary I. Peebles, *Head Mistress.*
Ethel Stuart, } *Assistants.*
Gertrude Blackett, }

Primary School—Selina F. Sloan, *Head Mistress.*
Annie L. Woodington } *Assistants.*
Clara L. Douglas, }
Louise Derick, *Kindergarten.*

These Schools can accommodate about 400 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of four and upwards, and give a thorough English education. Fees :—Boys' and Girls' Model Schools, $1.00 to $1.50 per month ; Primary School and Kindergarten, 75c.; payable monthly in advance.

University School Examinations,

1898.

FOR CERTIFICATES OF THE UNIVERSITIES AND THE TITLE OF ASSOCIATE IN ARTS.

HELD UNDER THE SUPERINTENDENCE OF MCGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE; AND RECOGNIZED BY THE PROTESTANT COMMITTEE OF THE COUNCIL OF PUBLIC INSTRUCTION.

These Examinations are held in Montreal and at Lennoxville; and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with the names of satisfactory Deputy Examiners, and guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls from any Canadian school.

PART I.—ORDINARY A.A.

SUBJECTS OF EXAMINATION.

I. PRELIMINARY SUBJECTS.

Writing.

English Dictation.

English Grammar, including Easy Analysis.

A Short Essay on a subject to be given at the time of the Examination.

Arithmetic (all the ordinary rules, including Square Root and a knowledge of the Metric System).

Geography (acquaintance with the maps of each of the four continents, and of British North America).

British History and *Canadian History.*

*New Testament History.** (Gospels and Acts, as in Maclear).

* Candidates will be exempted from examination in this subject only if their parents or guardians make written objection thereto. In such case Taylor's First Principles of Modern History will be required.

II. Optional Subjects.

Section 1.—Languages.

Latin :—

Caesar.—Bell. Gall., Bks. I. and II. Virgil.—Aeneid, Bk. I. Latin Grammar. Translation at sight and Prose Composition, both based on the prescribed prose text.	200 marks.

Greek :—

Xenophon.—Anabasis, Bk. I. Greek Grammar. Translation at sight and Prose Composition, both based on the prescribed Prose text.	200 do

French :—

French Grammar. Easy translation, from English into French, and from French into English. The reproduction in French of an easy narrative read in English.	100 do

German :—

Grammar.—Vandersmissen's Accidence and Syntax, especially the Accidence, including English German Exercises. An equivalent amount of Grammar and English-German translation from any good manual will be accepted in place of Vandersmissen. Joynes' German Reader.	100 do

Section 2.—Mathematics.

Arithmetic :—

As required for Model School Diploma. All ordinary commercial rules, fractions of greater complexity, circulating decimals, cube root, the mensuration of rectangles, circles, rectangular prisms, rectangular pyramids, cylinders, cones, spheres, and all such figures as can be resolved into or referred to these elements. The use of six figure Logarithms..	100 do

Geometry :—

Euclid, I., II., III., with easy Deductions.. ..	100 do

Algebra :—

Elementary Rules, Involution, Evolution, Fractions, Indices, Surds, Simple and Quadratic Equations of one or more unknown quantities.	100	do

Plane Trigonometry :—

(As in Hamblin Smith, pp. 1-100, omitting Ch. XI.)	100	do

Section 3.—English.

The English Language :—

Meiklejohn's English Language, Parts, I., II., III. Trench's Study of Words.	100	do

English Literature :—

Meiklejohn's English Language, Pt. IV. Shakspere's Richard II. Scott's Lady of the Lake.	100	do

History.—(as in Primers of Greece and Rome, and Collier's Great Events)..	100	do
Physical Geography :—Hinman's Eclectic Physical Geography is recommended	100	do

Section 4.—Natural and Physical Sciences, etc.

Zoology (as in Nicholson's Introductory Text-Book)..	100	do
*Botany** (as in Spotton's High School Botany, with Penhallow's Guide to the Collection of Plants, and Blanks for Plant Descriptions†).	100	do
Chemistry (as in Remsen's Elements of Chemistry, pp. 1 to 160)..	100	do
Physiology and *Hygiene* (as in Cutter's Intermediate.)..	100	do
Physics (as in Gage Introduction to Physical Science) (Chapters I., II., III., IV. and V.).	100	do
Geometrical and Freehand Drawing..	100	do

* In connection with the Botany examination, marks will be given for collections of mounted specimens made in accordance with Penhallow's Guide to the Collection of Plants. The Head Teacher of each school will forward with the answers a specimen from each pupil's collection, and also (on a furnished form) a detailed statement as to the collections made. Not more than 50 specimens will be expected to constitute a collection, and marks may be allowed *pro rata* for fewer.

† These Blanks may be obtained from booksellers in Montreal or elsewhere.

Geometrical.—Vere Foster R1 and R2, also problems 119 to 129 of R3, or McLeod's Geometrical Drawing.

Freehand.—Rules of Perspective, Drawing from the object (as in the Dominion Freehand Drawing books, numbers 1 to 5, inclusive).

REGULATIONS.

1. To obtain the Certificate of Associate in Arts, Candidates must pass in all the Preliminary subjects, and also in any six of the Optional subjects, provided that the six include one subject at least from each of the four Sections.

2. In addition to the six Optional subjects selected for passing, Candidates may take other Optional subjects, but the total possible number of marks obtainable in all the Optional subjects chosen must not exceed 1000.

3. Candidates will not be considered as having passed in any subject, unless they have obtained at least 40 per cent. of the total number of marks obtainable in that subject.*

4. The total number of marks gained by every Candidate in the Optional subjects shall be added up, and the Candidates arranged in order of merit in a printed list at the close of the Examination, those who are over 18 years of age on the first day of June being in a separate list. The marks in any subject shall not be counted if the Candidate has obtained less than 40 per cent. in that subject.

5. Candidates who obtain at least 75 per cent. of the marks in any Optional subject shall be considered as having answered creditably in that subject, and special mention of the same will be made in the Associate in Arts Certificate.

6. Candidates who pass in the subjects of the University Matriculation Examinations may, without further examination, enter the Faculties of Arts and Applied Science. (See Note 2 *infra.*)

7. Candidates who fail, or who may be prevented by illness from completing their examination, may come up at the next examination without extra fee.

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* *When two or more books or subjects are prescribed for one examination it is necessary to pass in each.* Candidates will not be allowed to pass in the Preliminary Grammar, unless they show a satisfactory knowledge of Syntax (Parsing, Analysis, and questions connected therewith). In Classics, at least one-third of the marks allotted to grammar must be obtained.

8. Candidates who pass in all the Preliminary subjects may, at any subsequent examination, take the Optional subjects only, and without extra fee.

9. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

10. The examinations will begin on Monday, May 30th, at 9 a.m.

11. Lists of the names, ages, and Optional subjects to be taken by the Candidates, together with a fee of $4 for each Candidate, must be transmitted to the Secretary, McGill University, Montreal, on or before April 30th. (Blank forms and copies of the regulations will be furnished on application.)

NOTE 1.—No fees will be exacted for the examination of pupils of Academies under the control of the Protestant Committee; but in order to obtain the certificate from the Universities, the prescribed fee, viz., $4, must be paid to the Secretary of the University Examiners.

Candidates who pass Grade II of the Academy Course of Study will be exempted from the Preliminary Subjects of the A. A. Examination.

The answers must be written in the answer book, specially made for the purpose, under the direction of the Board of Examiners.

The complete regulations of the Protestant Committee of the Council of Public Instruction with reference to these examinations may be obtained on application to the English Secretary, Department of Public Instruction, Quebec.

NOTE 2.—MATRICULATION SUBJECTS REFERRED TO IN REG. 6.

In Arts.—(1) Latin or Greek; (2) Geometry; (3) Algebra; (4) Arithmetic; (5) English Grammar; (6) English Dictation; (7) British History; (8) English Literature; (9) Greek or Latin (if not already taken), *or* two Modern Languages; (10) Botany or Chemistry.

In Applied Science.—Geometry (Euclid, Bks. I. to IV., VI., and definitions of Bk. V.), Algebra, Trigonometry, Arithmetic, English Dictation, Composition, English Grammar, British History, English Literature, and one Language, viz., Greek, Latin, French or German.

(Matriculation Examinations are also held at the opening of the University Session in September. See Calendars of the Universities.)

PART II.—ADVANCED A.A.

SUBJECTS OF EXAMINATION.

I. Preliminary Subjects.

As under Part I.

II. Optional Subjects.

Section 1.—Languages.

Latin :—

Virgil.—Aeneid, I.
Cicero.—In Catilinam, I. and II.
position, Parts III. and IV.), and Translation at sight from Caesar and Nepos.
Grammar, Prose Composition (Collar's Practical Latin Com-

Greek :—

Xenophon.—Anabasis, I. and II.
Homer.—Illiad, IV., and Odyssey, VII.
Grammar and Prose Composition (Abbott's Arnold's Greek Prose Composition, Exercises 1 to 25).

French :—

Lamartine, Jeanne d'Arc.
Molière, Le Bourgeois Gentilhomme.
Translation at sight from French into English, and from English into French.
Grammar and Dictation.

German :—

Lessing, Emilia Galotti.
Schiller, Der Kampf mit dem Drachen.
Grammar and translation from English into German.

Section 2.—Mathematics.

Geometry :—

Euclid, Bks. I. to IV., Defns. of Bk. V., Bk. VI.

Algebra :—

To the end of Progressions.

Trigonometry :—

As in Hamblin Smith (the whole).

Section 3.—English.

The English Language :—

Lounsbury's History of the English Language.
Mason's English Grammar.
A Composition.

English Literature :—

Meiklejohn's English Language, Pt. IV.
The Elizabethan Period (Morley's First Sketch).
Milton's Paradise Lost, Bks. I. and II.

History :—

Grecian History.—The Persian and Peloponnesian Wars.
Roman History.—From the Wars of Marius and Sulla to the death of Tiberius.
English History.—The Reformation and Puritan England, as in Green's Short History.

Section 4.—Natural and Physical Sciences, etc.

Botany :—Gray's Text-Book.

General Morphology and Classification, Determination of Canadian Species, exclusive of Thallophytes. Distribution of Orders represented in Canada.
Credit will be given for collections of plants as under Part I.

Chemistry :—Inorganic, as in Remsen's Elements.

Also, an examination in Practical Work (to be held only in Montreal and at Lennoxville).

Physics :—As in Gage and Fessenden's High School Physics.
Also, an examination in Practical Work (to be held only in Montreal and Lennoxville).

Drawing :—Orthographic Projection, including Simple Penetrations, Developments and Sections, as in Davidson's Orthographic Projection.

REGULATIONS.

The Regulations of Part I., with the following modifications and additions, will apply to the advanced subjects :—

1. Candidates who pass in six of the advanced subjects including one at least from each of the four Sections) will receive an

Advanced A. A. certificate. The number of marks given to each subject will be the same as in Part I., and additional advanced subjects may be taken as in Reg. 2, Part I.

2. Candidates who fail in one or more of the subjects required for the advanced A. A. may, on the recommendation of the Examiners, be given an ordinary A. A. certificate.

3. The examinations in the advanced subjects will be held at the same time and in the same manner as those in the ordinary subjects. They will be open to all who have already passed in the preliminary subjects, whether they have taken the ordinary A. A. or not. The preliminary subjects must be taken either one or two years before the advanced subjects.

4. Candidates who pass the advanced examinations in Greek, Latin, Geometry, Algebra, and English Language* shall be considered as having passed the Higher Matriculation Examination of the First Year in Arts, McGill University.

5. Candidates must, before April 30th, give notice of intention to present themselves for the examination, specifying the optional subjects in which they wish to be examined.

6. The ordinary fee of $4.00 must be paid before taking the preliminary subjects, and an additional fee of $10 at the time of making application for the advanced examinations† A Candidate who fails to pass the Advanced A. A. Examination shall be required to pay a fee of $5 for every subsequent Advanced A. A. Examination at which he may present himself.

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* French as in Part I., Note 2.

† Candidates from Academies under the control of the Protestant Committee of the Council of Public Instruction are exempt from the former fee, but not from the latter.

LIST

OF

SUCCESSFUL CANDIDATES

RESULTS OF EXAMINATIONS, 1897.

ADVANCED ASSOCIATE IN ARTS.

No.		Marks
1	Joseph A. Copeman (Quebec, H.S.),	718
3	William Walford (Westmount Academy),	525

ASSOCIATES IN ARTS.

I. *Under* 18 *Years of Age.*

87	Alan Radford (Abingdon School),	838
143	Catherine Cushing Barron (Lachute Academy),	828
40	Frederick James Tees (Montreal High School),	806
166	Essie M. Smith (Quebec Girls' High School),	803
35	William James Scott (Montreal High School),	781
44	Mabel Charlotte Armstrong (Montreal Girls' High School),	779
15	Robert James Harper (Montreal High School),	774
91	Isabel Radford (Miss Symmer's and Miss Smith's),	755
90	Emily Hilda Butteris (Miss Symmer's and Miss Smith's),	750
19	Frederick B. Lima, (Montreal High School),	733
45	C. Winifred Bennett (Montreal Girls' High School),	732
60	Evelyn Molson (Montreal Girls' High School),	730
42	Henry S. Williams (Montreal High School),	718
136	Ida Robson (Huntingdon Academy),	715
34	John Alfred Ryan (Montreal High School),	696
30	Shirley Ogilvie McMurtry (Montreal High School),	692
144	Marion Kenmure Barron (Lachute Academy),	687
20	Percy W. Ward (Montreal High School),	680
204	Lulu J. Roderick (Victoria Girls' High School, St John, N.B.),	675
145	Beatrice Maud Caron (Lachute Academy),	671
16	Norman C. E. Holland (Montreal High School),	663
164	Ella M. Fraser (Quebec Girls' High School),	659
55	Hilda Mabel King (Montreal Girls' High School),	658
29	Gordon Ogilvie McMurtry (Montreal High School),	652
209	Daisy Isabella Lawrence (Waterloo Academy),	648

No.		Marks.
202	L. Maude Kavanah (Victoria Girls' High School, St. John, N.B.),	647
179	Chauncy Allen Adems (Stanstead Wesleyan College),	646
85	Warwick Fielding Chapman (Abingdon School),	645
58	Elfreda Lomer (Montreal Girls' High School),	644
201	Edna Waterbury Gilmour (Victoria Girls' High School, St. John, N.B.),	639
33	Arthur L. Paterson (Montreal High School),	634
47	Ellen Maude Budden (Montreal Girls' High School),	627
117	Isabella Stevenson (Danville Academy),	626
8	George Percy Cole (Montreal High School),	624
9	John Hamilton Edgar (Montreal High School),	621
46	Jessie Mildred Budden (Montreal Girls' High School),	619
225	Hugh P. Ray (Westmount Academy),	617
32	Verner Lovelace Plant (Montreal High School),	616
181	Thos. Heriot Addie (Sherbrooke Academy),	611
7	Ernest Clinton Chandler (Montreal High School),	604
50	Dora Bella Fourney (Montreal Girls' High School),	603
25	Percival Molson (Montreal High School),	600
38	Albert W. Smith (Montreal High School), } equal	597
217	Mildred Hattie Whitcomb (Waterloo Academy), }	
158	Charlotte Stanfield Moe (Ormstown Model School),	595
27	John McDonald (Montreal High School),	588
222	Lily Le Maistre (Westmount Academy)	587
86	Robert Newmarch Hickson (Abingdon School),	586
36	Francis A. C. Scrimger (Montreal High School),	585
213	Naomi Laura Phelps (Waterloo Academy),	584
62	Kate Grier Patterson (Montreal Girls' High School), } equal	575
138	Roderick White (Huntingdon Academy), }	
226	William Smith (Westmount Academy),	570
18	George E. T. Jamieson (Montreal High School),	568
43	Norman Viner (Montreal High School),	567
10	Ernest de W. Fenwick (Montreal High School),	565
24	Charles Frederick Moffatt (Montreal High School),	563
89	Jennie Dodd Dixon (The Misses Gairdner),	537
108	Harry Orr (Cookshire Academy),	534
121	Katie Longway (Dunham Ladies College),	533
70	Jessie Eva Warrenir (Montreal Girls' High School),	524
146	Henry Dryden Heavysege (Lachute Academy), }	
211	James Stanley Neill (Waterloo Academy), } equal	520
89	Louisa Alma Locke (Huntingdon Academy), }	
31	Edgar Reginald Parkins (Montreal High School),	514
61	Louise Murray (Montreal Girls' High School),	511
59	Adelaide Victoria McConnell (Montreal Girls' High School),	509
13	Reginald Gnaedinger (Montreal High School),	508
78	Cameron Farquharson (Montrea Collegiate Institute),	505
41	George Arthur Walton (Montreal High School), } equal	501
63	Hilda Emily Rea (Montreal Girls' High School), }	

No.			Marks.
155	Walter Childs Bazin (Ormstown Model School),		498
107	Louis Mackie (Cookshire Academy),		495
6	Hugh D. Cameron (Montreal High School),	equal	493
192	Lucy Winifred Terrill (Sherbrooke Academy),	equal	
134	Emma J. Neville (Huntingdon Academy),		491
220	Horace Brodie (Westmount Academy),		488
101	Jeannie Macauley (Compton Ladies' College),		485
66	Bertha Campbell Tomkins (Montreal Girls' High School),		467
223	Leonard McBean (Westmount Academy),		466
48	Daisy Welhelmina Day (Montreal Girls' High School)		465
95	Edwin Batcheller (Bedford Academy	equal	457
198	Ethelwyn Crossley (Three Rivers Academy	equal	
208	May Elouise Gould (Waterloo Academy),		455
52	Elma Eliza Gosling (Montreal Girls' High School),		454
49	Elizabeth Dougal (Montreal Girls' High School),		450
71	Elizabeth Wright (Montreal Girls' High School),	equal	449
184	Grace Emily Channel (Sherbrooke Academy),	equal	
64	Mabel Richardson (Montreal Girls' High School),		
160	Gertrude McClennaghan (Ormstown Model School),	equal	446
180	Arthur Lockhurst (Stanstead Wesleyan College),	equal	
4	J. Archibald Bennett (Montreal High School),		442
182	Allan Peter Blue (Sherbrooke Academy),		426
185	Erwin Archie Duke (Sherbrooke Academy),		424
68	Mildred Edith Winters (Montreal Girls' High School),		421
104	Leslie Bishop (Cookshire Academy),		411
98	Albert M. Pattison (Clarenceville Model School),		399
212	Gertrude Emma Neill (Waterloo Academy),		396
120	Agnes Bickerdike (Dunham Ladies' College),		381
17	George Hunter (Montreal High School),		379
218	Bernice Adelaide Whitehead (Waterloo Academy),		378
150	Sarah Crawford (Lennoxville Model School),		373
39	Fred Murray Smith (Montreal High School),		372
125	James C. Kay (Granby Academy),		361
126	John E. Runnels (Granby Academy),		359
221	Jennie Hood (Westmount Academy),		355
56	May Agnes Ker (Montreal Girls' High School),		352
12	Percy Gomery (Montreal High School),		348
227	Nancy C. Archibald (Roslyn College, Montreal),		334

II. *Over* 18 *Years of Age.*

132	John R. McEwen (Huntingdon Academy),		853
131	Norval Dickson (Huntingdon Academy),		840
216	Norman Walter Strong (Waterloo Academy),		708
5	Albert Victor Brown (Montreal High School),		693
187	Emma Maud Giff (Sherbrooke Academy),		656
92	John Chapman Seaman (Sabrevois College),		654
147	Beatrice Elizabeth Robertson (Lachute Academy),		616

No.		Marks.
165	Winifred Fyles (Quebec Girls' High School),	615
135	James Neville (Huntingdon Academy),	612
210	Mabel Marion Libby (Waterloo Academy),	603
129	Mary A. Cameron (Huntingdon Academy),	596
137	Frank Shearer (Huntingdon Academy),	595
97	Lawrence H. Fisher (Clarenceville Mode School),	589
203	Katie R. Lander (Victoria Girls' High School),	588
194	Una May Williams (Sherbrooke Academy),	586
193	Martha Estelle Waterhouse (Sherbrooke Academy),	545
205	Dewie Elleston Bullis (Waterloo Academy),	513
175	Hattie Mackay (Sawyerville Model School),	511
197	Nora Cutter (Sutton Academy),	506
159	Henry Meyers (Ormstown Model School),	489
51	Blanche Fraser (Montreal Girls' High School), } equal.	486
148	Arthur Elias Vaughan (Lachute Academy), }	
130	Elizabeth M. Cameron (Huntingdon Academy)	483
224	May McLeod (Westmount Academy),	472
114	Roderick Riddle McClay (Danville Academy),	443
21	Ernest J. C. Markgraf (Montreal High School),	440
26	Joseph Armaud Mowatt (Montreal High School),	434
190	Grace Alice McLellan (Sherbrooke Academy),	429
109	Gertrude Planche (Cookshire Academy),	423
153	John James McMartin (New Westminister High School, B.C.),	420
170	Ruby Cross (St Francis College School),	418
152	Eva Taylor (Magog Model School),	417
113	Hermon Alfred Carson (Danvilie Academy),	392
96	Harold R. Crothers (Clarenceville Model School),	314
171	Jessie Kellock (St Francis College School),	306
106	Phoebe Learned (Cookshire Academy),	302

PASSED THE PRELIMINARY SUBJECTS.

(In order of numbers.)

28	54	57	123	163	172	229
231	232	233	234	235	237	238
	240	241	243	244	245	246
247	248	250	251	253	254	255
256	258	259	260	261	264	266
269	270	272	273	274	277	278
279	280	281	282	283	284	286
287	288	289	291	292	293	295
296	297	298	300	301	302	303
305	306	307	308	309	310	311
312	314	315	316	317	319	320
321	322	323	324	326	329	331
332	336	340	343	344	345	346
347	352	353	354	355	356	357
358	359	360	363	364	365	366
368	369	370	372			

McGILL UNIVERSITY, MONTREAL.

JUNE, 1897.

The following Candidates have passed the Examinations required for Entrance.

I. In Arts and Medicine.

Armstrong, Mabel C.,	Montreal	McEwan, John R.,	Huntingdon, O
Barron, Catherine C.,	Lachute, Q	McLaren, T. Orton,	Williamstown, Q
Bourne, James H.,	Brigham, Q	McLeod, May,	Westmount, Q
Brown, Albert Victor,	Montreal	McMurtry, Gordon O.,	Montreal
Budden, Jessie,	Montreal	McMurtry, Sherley O.,	Montreal
Budden, Ellen M.,	Montreal	Neville, James,	Huntingdon, Q
Butteris, Emily H.,	Montreal	Noyes, Emily M.,	Montreal
Chandler, Ernest C.,	Montreal	Patterson, Kate G.,	Montreal
Cotton, Wm. U.,	Sweetsburg, Q	Price, Llewellyn,	St. Catherines, O
Cole, George P.,	Montreal	Radford, Alan,	Montreal
Copeman, James H.,	Quebec	Radford, Isabel,	Montreal
Day, Daisy W.,	Montreal	Robertson, Wm. G.,	Montreal
Dickson, Norval,	Huntingdon, Q	Ryan, John A.,	Montreal
Fraser, Ella M.,	Quebec	Scott, Wm. James,	Montreal
Harper, Robert James,	Montreal	Scrimger, Francis A. C.,	Montreal
Harris, Spencer L. D.,	Ottawa, O	Smith, Essie M.,	Quebec
Le Maister, Lily,	Westmount, O	Stevenson, Isabella,	Danville, Q
Hampson, Edward G.,	Almonte, O	Strong, Norman W.,	Waterloo, Q
Lomer, Elfrida,	Montreal	Tees, Fred. James,	Montreal
Macker, Louise,	Cookshire, Q	Viner, Norman,	Montreal
Moe, Charlotte S.,	Ormstown, Q	Warriner, Jessie E.,	Montreal
Moffatt, Charles F.,	Montreal	Watson, Hugh,	Brigham, Q
Molson, Percival,	Montreal	White, Roderick,	Huntingdon, Q
Molson, Evelyn,	Montreal	Williams, Hy. S.,	Montreal

II. Medicine.

Babcock, John R.,	Brockville, O	McDougal, Daniel W.,	Williamstown, O
Buckman, Allan,	Brockville, O	Niven, Knox James,	London, O
Hepburn, James de C.,	Picton, O	Rogers, H. B.,	Vancouver, B.C.
Kennedy, Daniel W.,	Williamstown, O	Ross, Herbert,	Williamstown, O
Mackenzie, Stewart Donald,	Sarnia, O		

III. In Applied Science.

Askwith, Chas. A. E.,	Ottawa, O	Hunter, Frank,	Huntingdon, Q
Bazin, Walter Childs,	Ormstown, Q	Labatt, John S.,	London, O
Boyd, H. H.,	Montreal	Meyers, Henry,	Ormstown, Q
Burchell, Geo. B.,	Ottawa, O	Morley, Reginald W.,	Toronto, O
Cameron, Hugh D.,	Montreal	Norseworthy, Edward C.,	Toronto, O
DeBlois, Wm. H.,	Halifax, N.S.	Ogilvie, Paul,	Ottawa, O
Edgar, John Hamilton,	Montreal	Shearer, Frank,	Huntingdon, Q
Egleson, Jas. E.,	Ottawa, O	Taylor, Chas. W.,	Verschoyle, O
Gagnon, Edmund Ernest,	Montreal	Tupper, Charles,	Ottawa, O
Glasscoe, Archie P. S.,	Hamilton, O	Walsh, Wm.,	Ormstown, Q
Hale, John Lorne,	Pembroke, O	Ward, Clarence R.,	Stratford, O
Harrison, Wm. M.,	Pembroke, O	White, Gerald V.,	Pembroke, O
Higman, Ormand,	Ottawa, O		

STANDING IN THE OPTIONAL SUBJECTS.

[The numbers correspond with those in the preceding lists. Candidates whose numbers are in parentheses are equal in standing. Those preceding a single asterisk have obtained at least three-fourths of the marks; those preceding a double asterisk, at least one-half; those following at least forty per cent. The numbers of the Schools and Candidates are as follows. Quebec High School 1 and 352-358, inclusive; Westmount Academy, 2 and 3 and 219-226 inclusive; Boys' High School, Montreal, 4-43 and 229-300-372; (Girls') High School, 44-71 301-328 and 371; Montreal Collegiate Institute, 72-84; 329–337; Abingdon School, 85-88 338-342; The Misses Gairdner, 89; Miss Symmers' and Miss Smith's, 90 and 91, 343 and 344; Sabrevois College, 92, 345, 346; Aylmer Academy, 93 and 94; Bedford Academy, 95; Clarenceville Model School, 96 to 98; Coaticook Academy, 99 and 100; Compton Ladies' Academy, 101; Cookshire Academy, 103 to 109; Cowansville Academy, 110 to 112; Danville Academy, 113 to 117; Dunham Ladies' College, 120 to 124; Granby Academy, 125 and 126; Haldimand Mode School, 127; Huntingdon Academy, 129 to 138; Inverness Academy, 139 and 140; Knowlton Academy, 141; Lachute Academy, 143 to 148 inclusive: Lennoxville Model School 149 to 151 inclusive; Magog Model School, 152; New Westminster High School, 153; Ormstown Model School, 154 to 161 inclusive; Paspebiac Model School 162; Quebec, Girls' High School, 163 to 166, 339 to 367; Rawdon Model School, 167; St. Francis' College School, 168 to 174 inclusive; Sawyerville Model School, 175; Shawville Academy, 176 and 178; Stanstead Wesleyan College, 179 and 180; Sherbrooke Academy, 181 to 194 inclusive; Sutton Academy, 195 to 197 inclusive; Three Rivers Academy, 198 and 199; Victoria Girls' High School, St. John N.B., 201 to 204 inclusive; Waterloo Academy, 205 to 218 inclusive; Roslyn College, Montreal, 227 and 228; Prospect Academy, 368; Trafalgar Institute, 370.

Greek.—132, 5, 15,* 40, 131, 34, 42, 166, 216, (35, 70), (27, 77), 30, 36, 29, 87, 135, 7, 24, 138, 164, 43, 143, (25, 223) (39, 48), (179, 217), 26, (8, 80, 220), 165, 116, 158, 170, 167, 146, 117.
Advanced A.A. 1, 3**2

French.—91, 90, 107, 132, 30, (21, 42, 143), 29, 166, (5, 40), 34, (44, 62), 35, 163, (144, 181),* (121, 131), (51, 78, 193), (15, 87), (60, 126, 158), (43, 59, 155), 117, 68, (120, 175, 209), (8, 28, 58, 192, 197, 199), (55, 227), (32, 47, 148, 210,), (89, 145, 222), (20, 46, 179, 201), (10, 19, 52, 98, 109), 25, 203, (45, 136, 164, 224), (9, 16, 38, 72), (17, 159), 204, (50, 70, 92, 108, 194), (6, 48, 53, 59, 135, 138, 170, 202), (101, 106), (33, 54, 56, 97, 124, 125, 123, 171, 182, 198,)** (7, 23, 24, 176, 189), (12, 85, 152), (18, 127, 208, 221), (36, 110, 129, 185), (13, 137, 150, 178, 190), 130, (22, 31, 86, 168, 180, 188), (104, 173), (205, 216), (41, 66, 95, 96).
Advanced A.A. 1**.

Latin.—131, (35, 132), (40, 44), 45, 143,* 15, 55, (90, 166), 20 24, 87, (42, 60), 27, 5, 46, 145, (30, 77, 91), (19, 92), 167, 213, 202, (117, 209), 9. 16, 187, (66, 70, 201), (85, 216), 204, (50 164), (144, 210), (8, 89), 138, 52, 29, (37, 68, 152), 208, (86, 95), 62, 179 (43, 61, 135, 180, 192,)** (33, 58, 146), (18, 24, 190), 101, (32, 36, 38, 189, 220, (7, 158), (10, 47, 114, 165,) (108, 170) (51, 147, 212), (25 80), (207, 222, 224), (113, 153, 217), (21, 26, 207, 121), (1 5, 197), (59, 69, 211, 218), (28, 98, 116), (4, 41, 48, 63, 64, 70, 73, 97, 103, 109, 120, 160, 176, 184, 198, 199, 208, 203, 206, 223),
(Advanced A.A. 1,** 3.)

Optional History.—175, 87, 85, 204, 179,* 202, 91, 92, 180, 97, (86, 198), 104, 203, 101, 184, 201,** 96, (149, 227), 141.

Optional Geography.—166, 35, (27, 37), 43, 9, 136, (18, 24), 8, (85, 87, 143), (13, 40, 104, 165, 202), (15, 31, 181, 195), (29, 32, 217, 222),* 10, (20, 34, 42, 215), (5, 22, 36, 90, 216), (25, 163, 194, 211), (7, 17, 97, 170, 209, 225), (19, 30, 109, 220, 223), (6, 32, 55, 96, 98, 205), (26, 38, 155, 187, 197, 221), (12, 23, 92, 95, 185, 204), (137, 226), (100, 191, 213, 218), (16, 86, 158, 203), (11, 89, 99, 108, 144, 145, 201), (21, 129, 189), (39, 147, 171, 210), (81, 103, 162), (441, 80, 182), (58, 130, 159), (88, 152, 212), (14, 72, 82, 183, 192, 224), (148, 184, 192, 214, 219), (133, 186, 190, 208), (74, 151, 168), (13, 75, 76, 77, 154), (107, 161, 172, 196),** (141, 150, 157, 176, 188), (28, 62, 78), (83, 93, 106), (134, 169, 206), (172, 178), (72, 207), (160, 174).

Optional Arithmetic—87, 164, 143, 210, 209, 213, 217, 136, 78, 150, 205, 147, (133, 148), (181, 225, 226),** 216, 149, 207, 194, (108, 144, 195), 215, (134, 137), (95, 174, 212), 146, 182, (208, 218), 157, 140, 171,** (24, 130), 214, 185, (129, 156), (160, 187), 89, 139, (86, 184, 193, 196, 211), (85, 100, 175, 219).

Geometry.—87, (40, 166), 165, 131, 20, (44, 86, 204, 213), 30, (175, 216), (38, 209), (35, 210), (19, 34), 45, (164, 205), (15, 33, 60, 202), (8, 29, 42, 90, 212), (5, 97, 121, 193), 220, (203, 217), (85, 113, 167, 226),* (23, 225), (18, 24, 187, 221), (36, 39, 104, 132, 222), (91, 130, 207). (25, 108, 145), (11, 27, 137, 143, 197, 208), (68, 179, 201), (6, 41, 69, 78, 136, 211, 218), (32, 106, 107, 114), (13, 62, 92, 111, 135, 144, 147, 159, 189, 194), (101, 129), (70, 153, 176, 223), (46, 52, 65, 77, 181), (7, 50, 61, 80, 115, 170, 180), (100, 134, 138, 198, 206), (16, 47, 116, 163, 224), (9, 149, 161, 182), (58, 89, 99, 158, 174), (125, 141), (31, 195), (56, 73, 81, 98, 126, 155), (54, 94), (4, 26, 43, 156), (21, 184, 185, 192),** (96, 103), (10, 49, 160, 214), (146, 162, 168, 169, 190), (17, 64, 188), 95, (14, 140, 151, 157), (12, 67, 71, 93, 228), (22, 37, 48, 51, 109, 120, 122, 133, 139, 150, 152, 171, 219.)
(Advanced A.A.).—1, 2, 3, *

German.—222, 63, 90, (46, 91, 227), (44, 58, 107), 60,** 225, 47, 224, (62, 121, 226).

English Language.—(Advanced A.A.) 92,* 91, 44, 204, 51, 54, 50, 60, 58, 90, 46, (47, 89), (52, 55), 61, 64, 203, 45** 70, (57, 68), 69, (48, 71), (49, 62, 202), 63, 59, 66, 56.

English Literature.—41, 143, 87, 32, (55, 222), (91, 121), (89, 132, 192), (9, 54), (92, 166), (15, 47, 58, 144, 145),* (7, 179), 35, (48, 194), 71, (146, 148), (16, 45 189), (23, 25, 27, 34, 36, 40, 59, 204), (5, 50), (51, 180), (10, 38, 116, 131, 136, 158), (126, 224), (162, 170, 195, 202, 227), (4, 18, 49, 57, 165, 175), (19, 138, 176, 220), (8, 42, 60, 108, 109, 193, 217), 24, 31, 33, 46, 70, 125, 185, 197, 225), (43, 85, 114, 198, 223), (56, 137, 139, 147, 155), (20, 61, 80, 97, 113, 161, 184), (11, 86, 104, 135, 164), (21, 64), (62, 69, 90, 203), (117, 134, 159, 163), (12, 39, 53, 63, 68, 187)** (66, 81, 106, 140, 160, 171, 208, 221), (13, 17, 30, 129), (14, 96, 152), (6, 26, 99, 226), (101, 219), (29, 107, 201), (28, 115), (37, 57, 122, 124, 211), 133, (41, 65, 78, 82, 95, 120, 127, 130, 209, 210).
(Advanced A.A.) 2, 3.

Physiology and Hygiene.—(131, 132, 135), 129, (136, 137), (138, 209), 216, (113, 205), 217, (187, 194), (166, 208), (13, 114, 124, 130), 189, (31, 134, 162),* (103, 160, 197), (158, 192), (146, 210), (156, 181), (179, 195, 211, 215), (71, 139, 155, 212), (116, 143, 157, 198, 213), (89, 101, 225), (147, 184, 186, 214), (96, 97, 148, 135), 117, (104, 125, 133, 193), 218, (182, 188, 190), (108, 163, 226), (93, 115, 145, 159, 171, 175, 224), (78, 92, 144, 219), (98, 100 152, 164), (111, 141, 221), (65, 94, 106, 149, 150, 206), (127, 165, 223, 227).** 183, (126, 173), (107, 168, 196), 161, 12, (33, 140, 174, 220), (95, 151, 153), 99, 170, 172, 178, 222), 103

Chemistry.—(16, 19), 58, 44, 45, (20, 55), (6, 8, 60), (31, 216), (18, 67), 32*, (17, 201), (9, 41, 46, 57), (7, 11, 23, 33, 59, 87), (10, 22, 203), (4, 14, 23, 37), (38, 202), 15, (21, 50, 86, 204), (12, 64), 66, (13, 49, 56, 71, 85), (61, 114), 63,** 62, (53, 97), 69.

Physics.—40, 87, (34, 180), 19, 181, (30, 115), (16, 20, 113),** 35, (18, 37), (86, 116, 216), 42, (9, 31), (6, 36), (5, 7, 10, 11, 13, 24, 25, 32, 43, 114).

Drawing.—225, 40, 19,* 226, (35, 144), 145, 147, 60, 67, (29, 58, 62), 23, (8, 47), 61, (25, 45, 65), (32, 44), (15, 63), 36, (30, 39, 54), (52, 136), (16, 27, 181), 13, (24, 26, 66, 69), (22, 59, 133), (6, 70),** (50, 122, 123), (33, 34), (37, 38, 42, 134, 137), (57, 64), (10, 18, 53, 120, 130), (48, 56, 121), (49, 41, 94), (11, 12, 28, 31, 49, 51, 55, 68, 93).
(Advanced A.A.), 1, 3, **

Trigonometry.—132, 131, 87, 15, 33, 117,* (19, 136), (14, 16, 85), 135, 225, 161, 226, (149, 181), 194, 86, 9, (38, 150, 155), (159, 182), (32, 138). 10,** 20, 78, (4, 153), 37, (8 (6, 17, 41, 81, 88, 123. 137, 151, 193).
(Advanced A.A.)—1*.

Botany.—143, 90, 147, 144, 91, 50, (60, 129, 145), (121, 136), 44*, (45, 58, 158), (46, 64, 67), 61, (59, 148), 165, (47, 55, 120), (66, 195), (187, 193), (134, 160, 203), (49, 51, 190), 204, (57, 130), (189, 202), (69, 146, 159), (63, 201), 101, (137, 155), 133,** (71, 126), 122, 213, 222, 175, 157, (185, 197), (100, 110, 194).

Advanced A.A.—3, 2.

Algebra.—(15, 87, 131, 143, 166), (35, 132, 164, 213), (90, 179), 76, (45, 78, 111), 159, (91, 182), 25, 60, 42, 148, 30, 165, 187, (19, 40, 181), (47, 97), 7, (29, 194), (167, 117), (157, 201, 209), (33, 108, 144, 198), 155, 158, 205,* (59, 210), (216, 225, 226), (52, 193), 192, (49, 62, 129, 175), (43, 203, 204, 221), (79, 125, 137), (77, 195), (10, 41, 92, 145, 190), (11, 136, 152), (14, 38, 85, 135), (75, 196, 222), (5, 34, 57), (44, 95, 121), (20, 36, 88, 107), (32, 114), (62, 167, 220, 223), (9, 27, 127, 227), (56, 202), (55, 61, 100, 149, 150, 199), (37, 184, 218, 224), (134, 185). (6, 51, 63, 73, 93, 161),** (13, 70, 122, 176, 197), (17, 24, 50, 53, 81, 101), (26, 31, 46, 153, 160, 211), (39, 58, 120, 189), (21, 66, 86, 99, 146), (48, 116), (8, 10 3, 130, 156), (64, 68, 98, 140, 147, 154, 212), 67, 104, 138, 141, 110). (4, 72, 106, 109, 113, 170, 180, 206, 217).

Advanced A.A.—1,* 3,** 2.

Passed the University Examinations.

SESSION, 1896-97.

FACULTY OF LAW.

PASSED FOR THE DEGREE OF D.C.L. IN COURSE.

William de Montmolin Marler, B.C.L.

Robert Stanley Weir, B.C.L.

PASSED FOR THE DEGREE OF B.C.L.

(In order of merit.)

William Oswald Smyth, B.A., Toronto, O.

Francis J. Laverty, B.A. (Laval), Montreal.

J. Armitage Ewing, Melbourne, Q.

Chas. H. Mansur, B.A., Stanstead, Q

Abner W. Kneeland, M. A., South Stukeley, Q.

Ed. H. Trenholme Dickson, B.A., Trenholmeville, Q.

Wm. Langley Bond, B.A., Montreal.

George A. Montgomery, B.A., Phillipsburg, Q.

Joseph E. A. Bissonnet, B.A. (Laval), St. Hyacinthe, Q.

Alex. McN. Stewart, Edinburgh, Scotland.

Edgar N. Armstrong, B.A., Montreal.

Leslie H. Boyd, B.A., Montreal.

Frank A. C. Bickerdike, B.A., Lachine, Q.

Frederick E. Cole, Montreal, } equal
Pierre S. Jasmin, Coaticooke, }

Numa P. Brossoit, Beauharnois, Q.

Arnold W. Duclos, B.A., St. Hyacinthe, Q.

John Wilson Cook, Quebec, *Aeger.*

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged alphabetically.)

Barclay, J., Montreal
Brown, C. L., B.A., Port Lewis
Brown, W. K., Montreal
Burrell, R. H., B.A., Yarmouth, N.S
Campbell, I. G., D.V.S., Montreal
Clendinin, S. L, Brighton, Ont
Curran, T. J. J., Montreal
Dalmage, F. W., B.A., St. Mary's, O
Doyle, J. J., Halifax, N.S.
Dunbar, W. R., Abercrombie, N.S
Eberts, E. M. von, Winnipeg, Man
Foster, G. M., Pembroke, Ont
Foster, A. L., Ottawa, Ont
Gilday, F. W., Montreal
Gordon, G. S., Halifax, N.S
Gourley, T. A., Eganville, Ont
Gurd, C. C., B.A., Montreal
Harding, E. S., Amherst, N. S
Harvey, F. C., Wolfville, N.S
Hayden, E. W., Cobourg, Ont
Hurdman, H. H., Ottawa, Ont
Johnston, J. A., Emerald Junc, P.E.I
Johnston, W, Charlottetown, P.E.I
Jost, A. C., B.A., Guysboro, N.S
Keenan, C. B., Ottawa, Ont
Kerr, R. A., Montreal
Kirby, H. S., Ottawa, Ont
Laidley, I. H., Montreal
Laing, A. L. Montreal
Lennon H., B.A., Montreal
Le Touzel, J. R., Goderich, O
Lockary, J. L., St. Stephen, N.B.
Lyster, H. F., Richmond, Q
MacCallum, E C. D., Kingston, O
Macdonald, D. J., Whycocomagh, C.B.
McDougall, G. P., Grand River, P.E.I
McDougall, J. G., Blue Mountain, N.S.
McElroy, A. S., Richmond, O

McKinnon, F.W., Vankleek Hill, O
McLennan, A.A., Lancaster, O
McLennan, D.A., Montreal
McNally, W.P., Abrams Village, P.E.I.
McRae, J.D., Glen Ellis, O
McRae, W.R., Baddeck, C.B.
Malloch, N., Kenmore, O
Maloney, M.J., Eganville, O
Merkley, E.A., Morrisburg, O
Midgeley, R.J., Woodstock, O
Millburn, J.A., Peterboro, O
Morris, C.H, B.A., Windsor, N.S.
Morse, L.H., B.A., Bridgetown, N.S.
Pallister, W.T., Guelph, O
Palmer, A.J., Buckingham, Q
Pennoyer, A.R., Gould, Q
Ritchie, A.A., Dalhousie, N.B.
Robert, G.C., Holyoke, Mass.
Robertson, H.M., Chatham, O
Rogers, F.E., Brighton, O
Roy, J.J., New Glasgow, N.S
Scott, W.T., Montreal
Skeels, A.A., B.A., Montreal
Smith, H., Acadia Mines, N.S.
Smith, R.A., Durham, O
Stanfield, H.M., B.A., Truro, N.S.
Sterling, A., Fredericton, N.B.
Sutherland, G.R., Hodgson, N.S.
Tierney, J.A., Valleyfield, Q
Thomas, H.W., Montreal
Thomas, J.E., Montreal
Thompson, J.A., Kinnear's Mills, Q
Tozer, F.W., Newcastle, N.B.
Trainer, J.B., Kelly's Cross, P.E.I.
Wainwright, F.R., Montreal
Wainwright, S.F.A., St. Andrews, Q
Williams, E.J., B.A., Sherbrooke, Q
Wilson, F.W.E., Montreal

FACULTY OF ARTS.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M.A. IN COURSE.

Cole, Arthur A., B.A.
Dresser, Jno. A., B.A.
Townsend, Wm. McNeill, B.A.
Graham, Angus A., B.A.

B.A. ADMITTED "AD EUNDEM GRADUM."

Katherine T. Lyman, B.A. (Vassar College).

PASSED FOR THE DEGREE OF B.A.

In Honours.

(Arranged alphabetically.)

McGILL COLLEGE.

First Rank.—Archibald, Samuel G.
Cameron, Mary S.
Campbell, Roland P.
Doull, Ethel M.
Galt, Annie P.
Holden, Margaret.
Mackay, Malcolm.
McMaster, Andrew R.
MacMillan, Talmage R.

Ross, Elizabeth.
Rugg, Alice.
Saxe, John G.
Walbridge, Mabel H.
Wyman, Daniel B.
Young, Laura A.

Third Rank.—Steacy, Frederick W.

Ordinary B. A.

(In order of merit.)

McGILL COLLEGE.

Class I.—Ker, Robert Harold.
Rowat, Donald McK.
Boyce, William S. P.
Smith, A. Louise. } equal.
Ives, Charles K. } equal.
Reynolds, A. Florence. } equal.
Howard, A. Campbell P. } equal.
McBurney, Charles. } equal.
Henderson, Grace. } equal.

Class II.—Armstrong, W. J. Alexander. } equal.
Trenholme, Arthur K. } equal.
Campbell, Edward M.
Macfarlane, Lawrence.
Mallinson, Stephen H. } equal.
Wyman, Hiram B. } equal.
Douglas, Robert. } equal.
Willis, John J. } equal.
Russel, Colin K.
Browne, John G.
McLean, Samuel.
Stevenson, James.
Watters, Wm. H.

Class III.—Hinds, Charlotte.
McBurney, Edith E. } equal.
Stephen, Jennie. } equal.
Ross, Alexander R.
Ryan, William A.
DuBoyce, Percy C.
Ashdown, Charles R.

Æger.—McLeod, Donald M.

PASSED THE INTERMEDIATE EXAMINATION.

McGILL COLLEGE.

Class I.—Robertson, Lemuel.
Edward, Archibald T.
Wainwright, Arnold.
Patch, Frank S.
Bruce, Guy O. T.
Browne, Walter G. } equal.
McLeod, John B. }
Henderson, Ernest H.

Class II.—Cotton, Charles M. }
Ells, Hugh. } equal.
McClung, Robert K. }
Holiday, Annie. }
Rice, Horace G. } equal.
Scrimger, Anna M. }
Hunter, Edwin N. McL. } equal.
Keith, Henry J. }
Thompson, James E. } equal.
McGill, J. Winifred. }
Radford, Janet I.
Laurie, Ernest.
Goodall, James R.
Potter, Lucy E.
McKenzie, Bertram. } equal.
King, Christina C. }
McDonald, Paul A. }
McDougall, Louise. } equal.
White, E. Hamilton. }
Duguid, R. Colin.
Gardner, R. Lorne.

Class III.—Brodie, Margaret. }
Hardisty, Richard H. N. } equal.
Johnson, H. }
Bates, C. J. L.
Finley, Kathleen E.
Johnson, R. De Lancey.
Lee, Henry S.
Lundie, John Alexander.
Dixon, Wm. E.
Hurst, Isabel M.

Cumming, W. Gordon.
Parks, Margaret.
Armstrong, Catherine (*s*).
Holland, Thos. B. (*s*)
Millar, W. K. (*s*).
Munro, Thos. A. (*s*).
Reynolds, E. E. M. (*s*).
Stewart, Donald (*s*).

MORRIN COLLEGE.

Class I—Seifert
Class II—Jackson. (*s*).

(*s*) *With supplemental in one subject* (*arranged alphabetically*)

STANSTEAD WESLEYAN COLLEGE

Class III—Rugg.

FACULTY OF APPLIED SCIENCE.

ADMITTED TO THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

(*Ad eundem.*)

Lee Treadwell, Pencoyd, Pa., U.S.A.
Alexander Lawson Mellanby, B.Sc., Newcastle-on-Tyne, England.

ADMITTED TO THE DEGREE OF MASTER OF APPLIED SCIENCE.

(*In Course.*)

Frank Henry Pitcher, B.A.Sc., Montreal.

ADMITTED TO THE DEGREE OF MASTER OF ENGINEERING.

(*In Course.*)

John Taylor Farmer, B.A.Sc., Liverpool, England.

PASSED FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

(In Order of Merit.)

CIVIL ENGINEERING.

MacLeod, George Roderick, Uigg, P.E.I.
Newcombe, Avard Borden, Lakeville, N.S.
Ogilvie, William Morley, Cumming's Bridge, Ont.

ELECTRICAL ENGINEERING.

Stovel, Russell Wellesley, Toronto, Ont.
Thomson, Clarence, Montreal.

Macbean, Stanley Lorne, Montreal.
Macdonald, James Ewan, New Glasgow, N.S.
Macdonald, Peter William, West Bay, N.S.
Edward, John Ross, Outremont, Que.
Blair, David Edward, Chicoutimi, Que.
Burnham, Harold Bostwick, Peterboro, Ont.
Packard, Frank Lucius, Montreal.
Davidson, Shirley, Montreal.
Walters, Morley Punshon, Hull, Que.

MECHANICAL ENGINEERING.

McKinnon, George Douglas, Charlottetown, P.E.I.
Connal, William Ferguson, Peterboro, Ont.
White, Frank Herbert, Montreal.
Symmes, Howard Church, Aylmer, Que.
McKibbin, Frederick William James, Peterboro, Ont.
Bovey, Edward Palk, Torquay, Devon, Eng.
Balfour, Reginald Herbert, Montreal.
Drinkwater, Charles Graham, Montreal.
McLaren, Duncan Taymouth, Montreal.
Paradis, Paul, St. Johns, Que.
Finnie, Oswald Stirling, Ottawa, Ont., and Haycock, Richard Lafontaine, Ottawa, Ont., equal.
Chamberlain, William Theophilus, Halifax, N.S.
Ferguson, Thomas, Peterboro, Ont.
Ross, John Kenneth Levison, Montreal.
Sise, Charles Fleetford, Montreal.

Campbell, Alexander, Ottawa, Ont., aegrotat.

MINING ENGINEERING.

Turnbull, John Moncrieff, Montreal.
Thomson, Henry Nellis, Quebec, Que.
Bell, John Wainwright, Montreal.
Archibald, William Munroe, Truro, N.S.
Reinhardt, Carl, B.A.Sc., Montreal.
Denis, Theophile, B.A.Sc., Montreal.
Dougall, Ralph, Montreal.

PRACTICAL CHEMISTRY.

Suter, Robert Wm., Carleton Place, Ont.

FACULTY OF VETERINARY SCIENCE.

PASSED FOR THE DEGREE OF D. V. S.

Burns, Walter.
Connely, T. A.
Hilliard, W. A.
Killam, B. B.
Matthew, R. G.
Moore, J. C.
Newcomb, H. H.
Parker, J. C.
Stevenson, G. S.
Sugden, B. A.
Thayer, W. L.

Scholarships and Exhibitions.

SESSION 1896-97.

FACULTY OF ARTS.

I. SCHOLARSHIPS (Tenable for two years).

Year of Award.	Names of Scholars.	Subjects of Examination.	Annual Value.	Founder or Donor.
1895	Mackay, Malcolm	Mathematics.	$125	W. C. McDonald.
1895	Cameron, Mary T.	Mathematics.	125	Sir Donald Smith.
1895	Saxe, John G.	Nat. Science.	125	W. C. McDonald.
1895	Ker, R. Harold	Class.&Mod.Lang	125	W. C. McDonald.
1895	MacMillan, T. R.	Class.&Mod.Lang	125	W. C. McDonald.
1896	Gardner, Wm. A.	Mathematics.	125	W. C. McDonald.
1896	Brooks, Harriet	Mathematics.	125	Sir Donald Smith.
1896	Duff, Alex. H.	Nat. Science.	125	W. C. McDonald.
1896	Munn, D. Walter	Class.&Mod.Lang	120	Miss Barbara Scott
1896	Heine, M. C.	Class.&Mod.Lang	110	Chas. Alexander.

II. EXHIBITIONS (Tenable for one year.)

NAMES OF EXHIBITIONERS.	Academic Year.	Annual Value.	Founder or Donor.
Robertson, Lemuel	Second	$125	W. C. McDonald.
Ferguson, Colin C.	"	125	W. C. McDonald.
Bruce, Guy O. T.	"	125	George Hague.
Ainley, Laurence	First	125	W. C. McDonald.
Nutter, J. Appleton	"	125	W. C. McDonald.
Ogden, Chas. J.	"	100	Major Hiram Mills.
Dey, M. Helena	"	100 & free tuition	Sir Donald Smith.
Smith, Lillian A.	"	120	Sir Donald Smith.

Jane Redpath Bursaries, value $45 each, were awarded to Donald Cochrane and Elizabeth A. Brooks at the First Year Exhibition Examination.

Prizes, Honours and Standing.

SESSION 1896-97.

FACULTY OF LAW.

THIRD YEAR.

GRADUATING CLASS.

William Oswald Smyth, B.A. First Rank Honours and Elizabeth Torrance Gold Medal.

Francis J. Laverty, B.A. (Laval), First Rank Honours and Prize of $50.

J. Armitage Ewing, First Rank Honours and Prize of $25.

A. W. Kneeland, M.A., Prize for Thesis, $25.

Jos. E. A. Bissonnet, B. A. (Laval), British Columbia Graduates' Society Prize. Awarded for answering all questions in General Examination

Leslie H. Boyd, Wicksteed Silver Medal for Physical Culture.

Chas. H. Mansur, B.A., First Rank Honours.

Abner W. Kneeland, M.A., First Rank Honours.

E. H. T. Dickson, B.A., First Rank Honours.

William L. Bond, B. A., First Rank Honours.

G. A. Montgomery, B. A., First Rank Honours.

SECOND YEAR

E. Elwin Howard, B.A., First Rank General Standing, and Prize of $50.

Charles Iles, First Rank General Standing, and Prize of $25.

Samuel Clay, B.A. (Cantab), First Rank General Standing.

PASSED THE SESSIONAL EXAMINATION.

E. E. Howard, B. A., Chas. Iles, S. Clay, B. A. (Cantab), H. M. Marler, R. H. Rogers, B.A., J. C. Hickson, B.A., H. J. Elliott, Arthur Burnet, B.A, John R. Kennedy, Chas. Champoux, B.A. (Laval).

FIRST YEAR.

Frank C. Saunders, B.A., First Rank General Standing and first prize (Scholarship) of $100.

William Frederick Carter, Scholarship of $100.

Joseph Noel Félix Descarries, B.A. (Laval), prize of $50.

William Evander McIver, prize of $25.

PASSED THE SESSIONAL EXAMINATION.

Frank C. Saunders, B.A., William Frederick Carter, Joseph Noel Félix Descarries, B.A. (Laval), William Evander McIver, Edmond B. Drolet, B.A. (Laval), Walter H. Lynch, William Carlos Ives, Edward P. F. McCabe (*s*), William S. Ball, E. E. Vipond (*s*), Joseph C. Barlow (*s*), Walter E. G. Thorneloe, B.A. (Bishops), (*s*), Henry Baby, jun., B. A (St. Mary's), (*s*).

STANDING IN THE CLASSES.

THIRD YEAR.

CRIMINAL PROCEDURE—Professor Hon. J. S. C. Wurtele, J. Q. B.

Smyth, Laverty, Bond; Stewart and Ewing, equal; Bisonnet; Brossoit and Kneeland, equal; Bickerdike, Cook, Dickson; Jasmin, and Montgomery and Armstrong, equal; Cole, and Mansur and Boyd, equal; Duclos.

MINORITY, TUTORSHIP, ETC.—Professor L. H. Davidson, D.C.L., Acting Dean.

Smyth, Laverty, Ewing, Mansur; Kneeland and Bissonnet, equal; Stewart and Montgomery, equal; Brossoit and Cook, equal; Dickson; Bond Boyd and Armstrong, equal; Bickerdike; Duclos and Jasmin, equal; Cole.

MERCHANT SHIPPING—Professor Davidson.

Smyth, Laverty, Bond, Mansur, Kneeland, Montgomery; Ewing and Armstrong, equal; Cook and Jasmin, equal; Duclos; Cole and Bissonnet, equal; Boyd, Stewart, Dickson, Brossoit, Bickerdike.

BILLS AND NOTES—Professor Davidson.

Third Year.—Ewing and Smyth, equal; Dickson, Laverty; Boyd and Armstrong, equal; Duclos, Montgomery, Mansur, Kneeland, Jasmin, Bickerdike, Bissonnet, Stewart, Cole, Bond.

HISTORY OF LAW OF LOWER CANADA AND CONSTITUTIONAL LAW—Professor Arch. McGoun, M.A., B.C.L.

Kneeland; Armstrong and Ewing, equal; Smyth, Laverty, Bickerdike; Mansur and Jasmin and Bond and Dickson, equal; Stewart, Bissonnet; Boyd and Montgomery, equal; Cole, Brossoit, Duclos.

PRIVILEGES AND HYPOTHECS—Professor McGoun.

Ewing, Smyth, Mansur, Laverty, Montgomery, Cook; Bond and Dickson, equal; Armstrong, Stewart, Cole; Bissonnet and Jasmin, equal; Brossoit and Boyd and Kneeland, equal; Duclos, Bickerdike.

LAW OF PERSONS—Professor Thomas Fortin, LL.B., B.C.L., M.P.

Ewing, Smyth, Laverty, Stewart, Kneeland, Mansur, Armstrong, Bickerdike; Jasmin and Dickson, equal; Cole, Bissonnet; Montgomery and Bond, equal; Boyd and Brossoit, equal; Duclos.

LAW OF SALES OF IMMOVABLES—Professor W. de M. Marler, B.A., B.C.L., N.P.

Bond and Smyth and Laverty, equal; Ewing, Mansur; Cook and Montgomery, equal; Armstrong, Dickson; Cole and Duclos, equal; Bickerdike, Kneeland; Brossoit and Bissonnet and Stewart, equal; Boyd and Jasmin, equal.

LAW OF GIFTS—Professor Hon. C. J. Doherty, B.C.L., J. S. C.

Smyth and Dickson, equal; Montgomery; Laverty and Bissonnet and Mansur, equal; Bond, Ewing, Kneeland, Armstrong, Duclos, Cole, Brossoit and Stewart, equal; Jasmin, Boyd, Bickerdike.

LAW OF WILLS AND SUBSTITUTIONS—Professor Doherty.

Smyth, Dickson; Ewing and Boyd, equal; Kneeland and Mansur, equal; Bond and Laverty and Stewart, equal; Bissonnet and Cook, equal; Armstrong, Bickerdike, Jasmin, Montgomery, Cole, Duclos, Brossoit.

SALES OF MOVEABLES—Professor Eugene Lafleur, B.A., B.C.L.

Laverty, Montgomery; Mansur and Smyth, equal; Bond and Dickson, equal; Stewart; Bickerdike and Ewing, equal; Kneeland, Bissonnet; Boyd and Cole, equal; Duclos, Jasmin, Brossoit, Armstrong.

CIVIL PROCEDURE—Lecturer P. C. Ryan, B.C.L.

Laverty, Smyth, Dickson, Ewing; Kneeland and Bissonnet, equal; Armstrong and Stewart, equal; Montgomery, Mansur, Boyd; Jasmin and Cole, equal; Brossoit, Bond, Cook, Bickerdike, Duclos.

LAW OF CARRIERS—Lecturer Aimé Geoffrion, B.C.L.

Kneeland, Ewing, Laverty; Montgomery and Brossoit, equal; Bickerdike and Mansur, equal; Bond; Dickson and Smyth, equal; Bissonnet, Armstrong, Duclos, Stewart, Jasmin, Boyd, Cole.

Second Year.—

CRIMINAL PROCEDURE—Professor Wurtele.

Hickson; Elliott and Clay, equal; Iles and Honan, equal; Howard; Marler and Champoux, equal; Burnet; Semple and Rogers and Kennedy, equal.

LAW OF BILLS AND NOTES—Professor Davidson.

Howard, Kennedy, Iles, Champoux, Hickson; Marler and Elliott, equal; Clay, Burnet, Rogers.

MINORITY TUTORSHIP, ETC.—Professor Davidson.

Hickson, Howard, Marler, Kennedy, Rogers, Iles; Champoux and Elliot; equal; Clay and Honan and Semple, equal; Burnet.

MERCHANT SHIPPING—Professor Davidson.

Clay, Howard, Marler, Rogers, Burnet, Elliott, Hickson, Honan, Iles, Kennedy; Champoux and Semple, equal.

HISTORY AND CONSTITUTIONAL LAW—Professor McGoun.

Howard, Clay, Iles, Rogers, Hickson, Burnet, Kennedy, Semple; Champoux and Elliott, equal; Marler.

PRIVILEGES AND HYPOTHECS—Professor McGoun.

Iles, Clay, Burnet, Howard, Hickson, Rogers, Marler, Elliott, Kennedy, Semple, Champoux.

LAW OF PERSONS—Professor Fortin.

Iles, Clay, Howard, Marler, Rogers, Kennedy, Elliott, Hickson; Burnet and Semple and Champoux, equal.

SALES OF IMMOVABLES—Professor Marler.

Howard; Marler and Rogers, equal; Iles, Clay, Champoux, Elliott, Kennedy; Hickson and Burnet, equal.

LAW OF GIFTS—Professor Doherty.

Howard, Clay, Marler, Elliott, Iles, Rogers, Hickson, Burnet, Kennedy; Honan and Champoux, equal; Semple.

LAW OF WILLS AND SUBSTITUTIONS—Professor Doherty.

Marler and Rogers, equal; Howard, Burnet, Champoux, Hickson; Elliott and Kennedy, equal; Clay, Iles, Honan.

SALES OF MOVEABLES—Professor Lafleur.

Iles; Clay and Howard, equal; Marler, Rogers, Burnet, Elliott, Kennedy, Hickson, Champoux, Semple.

CIVIL PROCEDURE—Lecturer Ryan.

Iles, Clay, Howard, Semple, Marler, Rogers; Hickson and Burnet, equal; Elliott; Honan and Kennedy, equal; Champoux.

LAW OF CARRIERS—Lecturer Aimé Geoffrion.

Iles, Howard, Rogers, Kennedy, Burnet; Champoux and Elliott and Hickson, equal; Marler, Clay, Semple.

First Year.

CRIMINAL LAW—Professor Wurtele.

Carter; Lynch and Saunders, equal; McCabe; Whelan and Drolet, equal; Baby and Bercovitch, equal; Thompson and MacIver, equal; Thornloe and Ball and Ives and Descarries, equal; Robertson and Barlow and Vipond, equal.

BILLS AND NOTES—Professor Davidson.

McIver, Drolet, Saunders, Descarries, Lynch; Barlow and McCabe, equal; Carter, Ball, Robertson, Ives; Vipond and Thornloe, equal.

MERCHANT SHIPPING, BOTTOMRY AND RESPONDENTIA—Professor DAVIDSON.

Saunders, Lynch; Carter and Drolet, equal; Barlow; Ives and Ball and MacIver, equal; Thornloe and Descarries and Vipond, equal; Robertson and Bercovitch, equal; Baby.

MINORITY, TUTORSHIP, EMANCIPATION AND CURATORSHIP—Professor DAVIDSON.

Lynch, Saunders; Carter and MacIver, equal; Ives, Drolet; McCabe and Bercovitch, equal; Descarries, Vipond, Ball, Thornloe; Barlow and Baby and Robertson, equal.

HISTORY AND CONSTITUTIONAL LAW—Professor MCGOUN.

Drolet and Saunders and Carter, equal; Descarries; McCabe and MacIver, equal; Whelan, Honan; Ives and Vipond, equal; Lynch, Baby, Thornloe, Barlow, Robertson.

PRIVILEGES AND HYPOTHECS—Professor MCGOUN.

Saunders, MacIver, Carter, Thornloe, McCabe, Descarries, Barlow, Drolet, Ives; Vipond and Whelan, equal; Lynch, Baby; Ball and Robertson, equal; Thompson, Bercovitch.

LAW OF PERSONS—Professor FORTIN.

Descarries, Saunders, Lynch, Drolet; Carter and McCabe, equal; Thornloe, Ives, MacIver, Ball; Vipond and Honan and Baby, equal.

LAW OF GIFTS—Professor DOHERTY.

Descarries, Saunders, Drolet, MacIver, Lynch, Ives, Barlow, Baby; Vipond and Carter and McCabe and Robertson and Thornloe and Whelan, equal; Ball (*s*).

LAW OF SALES OF IMMOVABLES—Professor MARLER.

Saunders and Carter, equal; Whelan and Baby and Lynch and Descarries and Barlow, equal; MacIver; Drolet and Ball and Vipond, equal; Ives, McCabe.

LAW OF WILLS AND SUBSTITUTIONS.—Professor DOHERTY.

Saunders, Descarries, MacIver, Ball, Ives, Robertson, Carter; Thornloe and Vipond and Drolet, equal; Barlow; McCabe and Lynch, equal; Whelan, Baby.

LAW OF SALES OF MOVEABLES.—Professor LAFLEUR.

Saunders, Descarries, Ives; Baby and Carter, equal; Lynch, Drolet; Ball and MacIver and Thornloe, equal.

CIVIL PROCEDURE.—Lecturer RYAN

Saunders, Carter, MacIver, Lynch, Drolet, Descarries, Barlow, McCabe Ball and Vipond and Ives and Bercovitch, equal.

LAW OF CARRIERS.—Lecturer GEOFFRION.

Saunders, MacIver; Descarries and Ives, equal; McCabe; Carter and Thornloe, equal; Drolet; Baby and Honan, equal; Whelan and Bercovitch, equal; Lynch, Vipond, Ball, Barlow; Thompson and Robertson, equal.

PRELIMINARY COURSE—Professor DAVIDSON.

Carter, Drolet, Lynch, Ives; Barlow and Robertson equal; McCabe, Baby, MacIver, Descarries; Ball and Thornloe, equal.

FACULTY OF MEDICINE.

MEDALS AND PRIZES.

The HOLMES GOLD MEDAL for the highest aggregate in all the subjects of the Medical curriculum, JOHN GEORGE MCDOUGALL, of Blue Mountain, Nova Scotia.

The FINAL PRIZE for highest aggregate in Third and Fourth years subjects, ALEXANDER ROSS PENNOYER, of Gould, P. Q.

The CLEMESHA PRIZE for Clinical Therapeutics, ISAAC HENRY LAIDLEY, of Montreal, P.Q.

The SUTHERLAND MEDAL, ARTHUR LYALL MCMURTRY, of Bowmanville, Ont.

The SECOND YEAR PRIZE, WILLIAM OLIVER ROSE, of Lakefield, P. E. I.

The SENIOR ANATOMY PRIZE, NEWTON ESRA DRIER, of Richmond Corners, N. B.

The FIRST YEAR PRIZE, ALVA HOVEY GORDON, of St. John, N. B.

The JUNIOR ANATOMY PRIZE, LAUGHLIN GEORGE CAMERON, of Ottawa, Ont.

The BOTANY PRIZE, THOMAS TURNBULL, of Stratford, Ont.

The ZOOLOGY PRIZE, ALVA HOVEY GORDON, St. John, N. B.

The MCGILL MEDICAL SOCIETY PRIZES, Senior Prize, W. H. Dalpé, B.A.; Junior Prize, F. T. TOOKE, B. A.

FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

PRIZES.

Best General Examination—Silver Medal, gift of the Dean, and two Books, gift of the British Columbia McGill Alumni Association—Won by B. A. Sugden.

Veterinary Medicine and Surgery—R. G. Matthew.

" Anatomy—W. B. Wallis.

Cattle Pathology—R. G. Matthew.

Cynology—B. A. Sugden.

Pharmacology and Therapeutics—B. A. Sugden.

Botany—James McGregor.

Chemistry—W. B. Wallis.
Physiology—W. B. Wallis.
Histology—W. B. Wallis.

Special Prize for Examination of Horses for Soundness—Presented by McGill Veterinary Alumni Association of Massachusetts—H. H. Newcomb.

ASSOCIATION PRIZES.

For the best essays read before the Veterinary Medical Association during the session—1st—J. C. Parker. 2nd—B. A. Sugden. 3rd—R. G. Matthew.

For the best essay read before the Society for the Study of Comparative Psychology.—1st year—E. W. Hammond. 2nd year—J. P. Spanton. 3rd year—B. A. Sugden.

FACULTY OF ARTS.

GRADUATING CLASS.

B.A. Honours in Mathematics and Natural Philosophy.

Mackay, Malcolm.—First Rank Honours.
Cameron, Mary T.—First Rank Honours.

B.A. Honours in Classics.

Macmillan, Talmage R.—First Rank Honours and Chapman Gold Medal.
Steacy, Fred. W.—Third Rank Honours.

B.A. Honours in Geology, Mineralogy and Palæontology.

Campbell, Roland P.—First Rank Honours and Logan Gold Medal.
Saxe, John G.—First Rank Honours.
Walbridge, Mabel H.—First Rank Honours.

B.A. Honours in Mental and Moral Philosophy.

Saxe, John G.—First Rank Honours and Prince of Wales Gold Medal.
Ross, Elizabeth.—First Rank Honours.
Doull, Ethel M.—First Rank Honours.

B.A. Honours in English Language, Literature and History.

Archibald, Samuel G.—First Rank Honours and Shakespere Gold Medal.
Holden, Margaret.—First Rank Honours.
McMaster, Andrew.—First Rank Honours.
Galt, Annie P.—First Rank Honours.

B.A. Honours in Modern Languages and History.

Young, Laura.—First Rank Honours and Aberdeen Gold Medal.
Rugg, Alice.—First Rank Honours.

B.A. Honours in Semitic Languages and Literature.

Wyman, Dan. B.—First Rank Honours and Neil Stewart Prize.

Special Certificates for First Rank General Standing.

KER, ROBERT HAROLD, Special Certificate and Hiram Mills Gold Medal.
ROWAT, DONALD McK.—Special Certificate.

HOWARD, A. CAMPBELL
IVES, CHARLES K.
McBURNEY, CHARLES
REYNOLDS, A. FLORENCE
SMITH, A. LOUISE
} equal—Special Certificates.

SCRIMGER, J. TUDOR, B.A.—New Shakespeare Society's Prize.

THIRD YEAR.

BROOKS, HARRIET.—First Rank Honours and Prize in Mathematics and Natural Philosophy. First Rank General Standing.

CARR, MURIEL B.—First Rank Honours in Classics. Prize in Latin, Prize in Greek. First Rank General Standing.

MUNN, D. WALTER.—First Rank Honours in Classics. Prize in Latin. Prize in Greek. First Rank General Standing.

DALGLEISH, ROBERT W.—First Rank Honours in Natural Science.

PATERSON, ROBERT CHILDS.—First Rank Honours and Prize in Mental and Moral Philosophy. First Rank General Standing.

DUFF, ALEX. HUNTLEY.—First Rank Honours in Mental and Moral Philosophy. First Rank General Standing.

SEIFERT, ETHEL MARGARET.—First Rank Honours in Mental and Moral Philosophy, Prize in French. First Rank General Standing.

CAMPBELL, J. A. E.—First Rank Honours in Mental and Moral Philosophy. First Rank General Standing.—Prize in Zoology.

THOMPSON, JAMES R.—First Rank Honours in Mental and Moral Philosophy. First Rank General Standing.

PLACE, EDSON GRENFELL.—First Rank Honours in Mental and Moral Philosophy.

SHIP, M. L.—First Rank Honours in Mental and Moral Philosophy.

VINEBERG, ABRAHAM.—First Rank Honours in Mental and Moral Philosophy

SHAW, A. LOUISE.—First Rank Honours in Mental and Moral Philosophy.

BATES, GEO. E.—First Rank Honours in Mental and Moral Philosophy.

BLYTHE, ROBERT B.—First Rank Honours in Mental and Moral Philosophy.

MACLEOD, H. STEINFORTH, } equal. } First Rank Honours in Mental and
TURNER, HENRY H. } Moral Philosophy.

BOURKE-WRIGHT, KATHLEEN.—First Rank Honours and Prize in English Language, Literature and History.

HEINE, H. CASWELL.—First Rank Honours in English Language, Literature and History.

WALKER, LAURA M.—First Rank Honours in English Language, Literature and History.

CAMERON, FRANCES.—First Rank Honours in Modern Languages and History.

Meyer, J. B.—First Rank Honours and Prize in Semitic Languages and Literature. First Rank General Standing.

McGregor, J. Albert.—Second Rank Honours in Natural Science.

Bishop, W. S.—Second Rank Honours in English Language, Literature and History.

MacLaren, Archibald H.—Second Rank Honours in English Language Literature and History.

Leney, John M.—First Rank General Standing.

Prudham, W. W.—First Rank General Standing.

Colby, John C.—Prize in French.

Jordan, Florence M.—Prize in Zoology.

THIRD YEAR.

PASSED THE SESSIONAL EXAMINATION.

Brooks, Carr, Paterson, Munroe; Daff and Meyer, equal; Campbell and Prudham, equal; Thomson and Seifert, equal; Leney; Turner (W. D.) and Ship, equal; Gilday and Heine and Cameron, equal; Dalgleish and Gardner, equal; Grace and McConnel and Vineberg, equal; Tarlton and Reynolds, equal; Colby and Place, equal; Turner (H. H.) and Worth, equal; Thomas and Jordan and Pearson, equal; Todd and Walker, equal; McGregor and Dover, equal; Bates and Ross and Bourke-Wright and Shaw, equal; Blyth and Maclaren, equal; Steen, Stephens, Bishop.

SECOND YEAR.

McClung, Robt. K.—(Hamilton Collegiate Institute).—First Rank Honours and Prize in Mathematics.

Bruce, Guy O. T.—(Huntingdon Academy).—First Rank Honours and Prize in Mathematics and First Rank General Standing.

Edward, Arch. T.—(Montreal Collegiate Institute).—First Rank Honours in Mathematics and First Rank General Standing.

Johnson, Helena.—(Private Tuition).—Second Rank Honours in Mathematics.

Robertson, Lemuel.—(Prince of Wales College, P.E.I.).—First Rank General Standing; Prize in Greek; Prize in Latin; Prize in German; Prize in Modern History; Coster Memorial Prize.

Wainwright, Arnold.—(Montreal Collegiate Institute).—First Rank General Standing; Prize in Greek; Prize in Latin.

Patch, Frank S.—(Montreal H. S.).—First Rank General Standing; Prize in Botany; Prize in Modern History.

McLeod, John B.—(Prince of Wales College, P.E.I.).—First Rank General Standing; Prize in Hebrew;

Brown, Walter G.—(Huntingdon Acad.).—First Rank General Standing.

Henderson, Ernest H.—(Huntingdon Acad.).—First Rank General Standing.

Holiday, Annie.—(Montreal Collegiate Institute).—Prize in French; Prize in Botany.

Finley, Kathleen.—(Private Tuition).—Prize in German.

SECOND YEAR.

PASSED THE SESSIONAL EXAMINATION.

Class I.—Robertson, Edward, Wainwright, Patch, Bruce; Brown and McLeod, equal; Henderson. *Class II.*—Cotton; Ells and McClung, equal; Holiday and Rice and Scrimger, equal; Hunter and Keith, equal; Thompson and McGill, equal; Radford, Laurie, Goodall, Potter; McKenzie and King, equal; McDonald and McDougall and White, equal; Duguid, Gardner. *Class III.*—Brodie and Hardisty and Johnson (H.), equal; Bates and Finley, equal; Johnson (R. DeL.), Lee, Lundie, Dixon, Hurst, Cumming, Parks, Armstrong (*s*), Holland (*s*), Millar (*s*), Munroe (*s*), Reynolds (*s*), Stewart (*s*).

s.—With supplemental examination in on subject (arranged alphabetically.)

FIRST YEAR.

Nutter, J. Appleton.—(Montreal H. S.). First Rank Honours and Prize in Mathematics; First Rank General Standing; Prize in Greek; Prize in Latin; Prize in English.

Johnson, J. Guy W.—(Montreal Collegiate Institute). First Rank Honours and Prize in Mathematics.

Dey, M. Helena.—(Simcoe H. S). Second Rank Honours in Mathematics; First Rank General Standing; Prize in French; Prize in Latin.

Brooks, Elizabeth A.—(McGill Normal School). First Rank General Standing; Prize in Greek.

Crowell, Bowman C.—(Milton H. S., Yarmouth, Nova Scotia). First Rank General Standing.

Marcuse, Bella.—(Montreal G. H. S.). First Rank General Standing; Prize in German; Prize in English.

Smith, Lillian A.—(Morrisburg Coll. Inst.). First Rank General Standing; Prize in Greek.

Chamberlain, Alex. F.—(Ottawa Coll. Inst.). First Rank General Standing.

Jackson, E. Gertrude.—(Montreal G. H. S.). Prize in Greek.

Goodhue, Harry.—(Institute Fellows). Prize in French.

Weinfeld, Hy.—(Montreal H. S.). Prize in German.

Forbes, Wilfrid M.—(Prince of Wales Coll., P.E.I.). Prize in German.

FIRST YEAR.

PASSED THE SESSIONAL EXAMINATION.

Nutter, Dey, Brooks; Crowell and Marcuse, equal; Smith (L. A.), Chamberlain; Dixon and Forbes, equal; Cohen and Hardy, equal; Scott (G. W.) and Garlick and Jackson and Sever, equal; Holman and Rorke and Weinfeld, equal; Cochrane and Ells and Goodhue and Johnson and Lundie, equal; Rowell, Elder; Jeakins and Ritchie and Walker (H.), equal; Sangster and Scott (H. E.) and Woodley, equal; Willis, Grier, Cooke, Mackinnon and Reford, equal; Cleghorn, Davies, Smith (N. F.), Kerr; Ireland and Tiffin, equal.

s.—Ainley, Baker, Buckham, Charters, Horsfall, McCormick, Perley, Rowat, Shaw, Skinner, Walker (J. J.).

(*s*) With supplemental examination in one subject (arranged alphabetically).

AWARD OF SCHOLARSHIPS, EXHIBITIONS AND CLASSING AT ENTRANCE, SEPTEMBER, 1896.

I. THIRD YEAR.—SCHOLARSHIPS (tenable for two years).

Mathematical Scholarship.— (*a*) Gardner (Wm. A.).

" " (*b*) *Donalda Dept.*—Brooks (Harriet).

Natural Science Scholarship.—(*a*) Duff (Alex. H.).

Classical and Modern Language Scholarship.—(*c*) Munn (D. Walter). (*d*) Heine (M. C.).

II. SECOND YEAR EXHIBITIONS (tenable for one year).

(*a*) Robertson (Lemuel), Prince of Wales Coll., P.E.I.

(*a*) Ferguson (Colin C.), Prince of Wales Coll., P.E.I.

(*i*) Bruce (Guy O. T.), Huntingdon Academy.

III. FIRST YEAR EXHIBITIONS.

(*a*) Ainley (Laurence), Almonte H. S., Exhibition.

(*n*) Nutter (J. Appleton), Montreal H. S., Exhibition.

(*e*) Ogden (Chas. J.), Three Rivers Academy, Exhibition.

(*f*) Cochrane (Donald), Montreal H. S., Bursary.

(*f*) Brooks (Elizabeth A.) McGill Normal School, Bursary.

DONALDA DEPARTMENT.

(*g*) Dey (M. Helena), Simcoe H. S., Exhibition.

(*h*) Smith (Lillian A.), Morrisburg Coll. Inst., Exhibition.

HIGHER ENTRANCE.

Class I.—Ainley and Dey, equal; Nutter, Ogden, Smith; Brooks and Cochrane, equal. (Schools given in Exhibition list.)

Class II.—Johnson (J. Guy W.), Montreal Coll. Inst.; Reford (Lewis M.), Montreal Coll. Inst.; Elder (Robt.), Huntingdon Academy, and Rowat (T. Alex.), Huntingdon Academy, equal.

Passed.—Cook (H. Lester), M. Coll. Inst.; Hardy (Chas. A.), Prince of Wales Coll., P.E.I.; Buckham (Helen D.), Huntingdon Acad.; Jeakins (Chas. E.), Huntingdon Academy; Ness (Wm.), Huntingdon.

(*a*) Annual value $125—Founder, W. C. McDonald, Esq.
(*b*) " " $125—Donor, Sir Donald Smith.
(*c*) " " $120—Founder, Barbara Scott.
(*d*) " " $110—Founder, Chas. Alexander, Esq.
(*e*) " " $100—Founder, Major Hiram Mills.
(*f*) " " $45—Bursary, Mrs. Jane Redpath.
(*g*) " " $100 and free tuition for four years—Sir Donald Smith.
(*h*) " " $120—Donor, Sir Donald Smith.
(*i*) " " $125—Donor, George Hague, Esq.

SUPPLEMENTAL EXAMINATIONS.

PASSED.

September to Christmas, 1896.

(*a*) *Supplemental Sessional.*

THIRD YEAR.—Du Boyce, Hinds.

SECOND YEAR.—Moore, Stephens, Dover, Steen.
(Morrin College.)—Reid.

FIRST YEAR.—De Witt, Douglas, Holland, Millar, Armstrong, Dorion.

(*b*) *Supplemental in one Subject.*

SECOND YEAR.—Bates, Colby, Maclaren, Place, Prudham, Ross, Ship, Thomas, Todd, Reynolds.
(Morrin College.)—Stuart, Meiklejohn.

FIRST YEAR.—Burton, Cumming, Stewart, McDougall, Burke (E.), Dixon, Kingsbury, Munroe, Gardner, Reynolds (E. E.)
(Stanstead Wesleyan College)—Howden.

SESSIONAL EXAMINATIONS, 1897.

McGILL COLLEGE.

(*Partial students are indicated by asterisks.*)

GREEK.

FOURTH YEAR.—*Class I.*—MacMillan, Henderson, Ker. *Class II.*—Smith, Steacy Willis, Mallinson, McBurney (Chas.), Ives. *Class III.*—Wyman (H. B.), Campbell (E. M.), Ross, McLean, DuBoyce.

THIRD YEAR.—*Class I.*—Munn, Carr, Meyer, Grace, Tarlton. *Class II.*—Heine, Campbell, Gardner, Worth. *Class III.*—Shaw, Blyth, Bourke-Wright, Ross, Steen, Stephens.
Prizes:—Munn and Carr.

SECOND YEAR.—*Class I.*—Wainwright, Robertson; McLeod and Patch, equal; Bruce and Edward, equal; *Mitchell (K.), Hunter, Keith, Cotton, Holiday, Laurie, Rice; Thompson and Ells, equal; Potter, Brown. *Class II.*—Goodall and Henderson, equal; McKenzie, Duguid; Johnson and Lundie, equal; McClung, McDougall; Gardner and Lee, equal; Bates and Hardisty and McDonald, equal; Millar and White, equal. *Class III.*—Parks; Munroe and *Heeney, equal; Stewart; Holland and Cumming equal; Armstrong and Hurst, equal; Dixon.

Prizes:—Wainwright, Robertson.

FIRST YEAR.—*Class I.*—Nutter, Ogden, Forbes; Jackson and Smith (L.) and Brooks, equal; Hardy, Crowell; Cohen and Dixon, equal; Ainley and Sever, equal; Chamberlain and Garlick, equal; Goodhue. *Class II.*—Cochrane and Elder and Ritchie and Woodley, equal; Mackinnon, Cleghorn, Rowell; Ells and Walker (H.), equal; Johnson and *Mitchell (S.) and Holman, equal; Rowat, Reford; Jeakins and Scott (H. E.) and Scott (G.W.) and Lundie, equal; Weinfeld. *Class III.*—Sangster and *Davies, equal; Grier, Perley, Smith (F. N.), Buckham, Cooke; Baker and Tiffin, equal; Ireland and Anderson, equal.

Prizes:—Nutter, Jackson, Smith (L.), Brooks.

LATIN.

FOURTH YEAR.—*Class I.*—MacMillan, Henderson, Howard. *Class II.*—Ker, Trenholme, Steacy, Rowat, Campbell (E. M.), Macfarlane, Reynolds, McBurney (Chas.). *Class III.*—Russel; Watters and Wyman H. B., equal; Browne, Stevenson; Hinds and McBurney (E. E.), equal; Ryan, DuBoyce, Stephen.

THIRD YEAR.—*Class I.*—Carr, Munn, Place, Dalgleish, Tarlton; Meyer and Paterson, equal; Gilday and Vineberg, equal; Pearson, McConnell, Worth. *Class II.*—Bourke-Wright and Cameron, equal; Leney, Todd, Reynolds, Seifert, Ross, Gardner, McLeod. *Class III.*—Steen; McGregor and McLaren and Shaw, equal; Walker, Colby, Dover, Jordan, Costigan, Thomas, Moore, Bishop.

Prizes:—Carr and Munn.

SECOND YEAR.—*Class I.*—Robertson, Wainwright, Patch, Edward; Bruce and McGill and McLeod, equal; Hunter, Brown, Thompson, Goodall; Potter and Scrimger, equal. *Class II.*—Hardisty and Keith and White, equal; Holiday and King and Laurie and Radford and Rice, equal; Ells and McDonald, equal; McClung; Lundie and McDougall, equal; Henderson; Brodie and Duguid, equal; Dixon and Reynolds, equal; Finley and Reid, equal. *Class III.*—Holland; Gardner and Hurst and Johnson (H.), equal; Redpath, Lee, McKenzie; Cumming and Johnson and Parks, equal; Munroe and Stewart, equal; Bates, Armstrong, Mackay.

Prizes:—Robertson and Wainwright.

FIRST YEAR.—*Class I.*—Dey, Nutter; Chamberlain and Forbes and Marcuse, equal; Brooks and Jackson and *Redpath, equal; Dixon and Holman

and Smith (L.), equal; Crowell and Mitchell (S.), equal. *Class II.*—Ainley and Garlick and Goodhue, equal; Walker (H.), Ogden; Cochrane and Jeakins and Sever, equal; Hardy, Cohen; Elder and Weinfeld, equal; Scott (G. W.), Willis; Ells and Rorke and Scott (H.), equal Shaw. *Class III.*—Rowell and Woodley, equal; Johnson; Lundie; Reford and Ritchie, equal; Mackinnon and Sangster, equal; Davies and Kerr, equal; Horsfall, Grier; Baker and Charters and Cleghorn, equal; McCormick, Cooke; Walker (J.) and Skinner equal; Perley and Tiffin, equal; Buckham, Shepherd, Ireland, McInnis, Mulholland; Rowatt and Smith (F. N.), equal.

Prizes:—Dey and Nutter.

MENTAL AND MORAL PHILOSOPHY.

B. A. Ordinary (*Moral Philosophy*).—*Class I.*—Reynolds (F.); Ker and Saxe, equal; Doull and McBurney (E.) and Ross (E.), equal; Russel, Howard, Wyman (H. B.); Alexander (J. L.) and Campbell (E. M.), equal; Crack and Rowat, equal; McBurney (C.) and Wyman (D. B.), equal; Dowson and Greaves, equal; Galt; Blythe and Henderson and Mallinson and Smith, equal. *Class II.*— Hinds and MacLean (S.) and Trenholme and Willis, equal; Douglas, Macfarlane; Armstrong and Boyce and Ross (A. R.), equal; Clarke and Heal and Ives, equal; Dorman and Stephen, equal; Ryan and Williams, equal; Browne; Holden and Walbridge, equal. *Class III.*—Reid and Watson, equal; Charlesworth, Watters; Bradshaw and McAteer, equal; Roberts, Brown (W. T.), DuBoyce, McLean (A.), Monsinger, Brown (A. J.), Stevenson, McGuire, Mair, Moore.

Third Year (*Mental Philosophy*).—*Class I.*—Carr, Paterson, Grace, Place; Duff and Ship, equal; Campbell (J. A. E.) and Shaw, equal; Dowson and Heal, equal; Heine and Jordan and Prudham, equal; Seifert; Leney and Reynolds (M. E.) and Thompson and Vineberg, equal; *Class II.*—Bates and Blythe and MacLeod (H. S.) and Walker, equal; Turner (H. H.); Blythe and Gardner, equal; Turner (W. D.); Pearson and Ross (A. B.), equal; Dalgleish and Williams, equal; Stephens, Worth; Clarke and Roberts, equal. *Class III.*—Charlesworth and Colborne and Rowan, equal; Halpenny (E. W.), Runnells, Costigan; McGregor and Moore, equal; Mick and Williamson, equal; Wilkinson, Maclaren, Bishop.

Prize for Honour Work.—Patterson.

Second Year (*Logic*).—*Class I.*—Robertson (*Prize*), Wainwright, McLeod, Patch; McClung, Radford; Redpath and Rice, equal; Brown, McDougall. Dowson and Hunter and Laurie and Munroe and Thompson, equal; *Class II.*—Henderson, McDonald, Reid, Edward, McGill; Goodall and Greaves and Lee and Scrimger, equal; Bates and Cotton, equal; Armstrong and Duguid and Finley and White, equal; Brodie; Ells and Hardisty and Johnson (H.), equal; McKenzie, McGregor; Bruce and Keith and King and Potter, equal. *Class III.*—Holiday; Cumming

and Gardner, equal; Reynolds, Mackay, Walker, Hurst, Cameron; DeWitt and Johnson (R. D.), equal; Millar and Parks, equal; Baker, Dixon, Anderson, Douglas; Holland and Lundie, equal; Stewart; Burke and Dorion and Harding and Howden and Mair, equal.

ENGLISH LITERATURE.

B.A. Ordinary.—*Class I.*—Trenholme, Archibald, Kerr, Willis, Holden, Rowat, Russell. *Class II.*—Macfarlane; Mallinson and McMaster, equal; Browne (J. G.) and Ives, equal; Henderson, Wyman (H. B.); Howard and McBurney (C.) and Ryan, equal; Smith, Boyce; Campbell and Galt, equal; Armstrong; MacLean (S.) and Reynolds, equal. *Class III.*—*Alexander and Stevenson, equal; Watters, *Bradshaw, Watson, Douglas; McBurney (E.) and Ross, equal; Du Boyce; Hinds and *McAteer, equal; *Blythe; *Reid and Stephen, equal.

ENGLISH LITERATURE AND RHETORIC.

Third Year.—*Class I.*—Bourke-Wright (*Prize*), Duff, Heine, Walker, McLaren. *Class II.*—Thomas, Tarlton, Bishop; *Cairns and MacLeod, equal. *Class III.*—Blythe and Steen, equal; Moore and *Rowan, equal; *Bartlett.

MODERN HISTORY.

Second Year.—*Class I.*—Robertson (*Prize*), Patch, Wainwright, Redpath, Henderson; Cotton and Edward, equal; Bruce, Gardner, McLeod, Hardisty, Brown and Duguid and McClung, equal; Holland; Lee and Scrimger, equal. *Class II.*—Ells and Laurie, equal; Hunter and Keith and Lundie and Reid and Reynolds, equal; Radford, Johnson (De L.); Hurst and King and Rice, equal; Potter; Bates and Goodall and Holiday, equal; DeWitt, McDonald; Baker and Stewart, equal; Dixon, Burke, Millar, White, McDougall. *Class III.*—McGill, Cumming, Parks; Johnson (H.) and Thompson, equal; Dorion and Mackenzie, equal; Finley, Brodie, Douglas; Howden and Munroe, equal.

ENGLISH LITERATURE.

First Year.—*Class I.*—Nutter (*Prize*), *Mitchell (S.), Marcuse (*Prize*), Jackson, Brooks, Woodley, Lundie, Scott (G.), Rorke, Cohen. *Class II.*—Garlick, Sever, Dey, Dixon, Horsfall, Ritchie, Cochrane, Crowell, Chamberlain, Grier; Rowell and Weinfeld, equal; Holman. *Class III.*—Charters; Baker and Walker (H.), equal; *Davies, *Walker (J.); Jeakins and Smith (F. N.), equal; Reford; Forbes and Hardy and *MacInnes, equal; *Secord and McCormick, equal; Tiffin and Willis, equal; Shaw, Johnson, Sangster; Cooke and Ness, equal; Ells and Kerr, equal; Cleghorn and Smith (L.), equal; *Hopkin and McKinnon and Perley, equal; Skinner, Goodhue, Scott (H.), Burke (M), Elder, *Anderson (G.), *Dickson, Ireland, Ogden, *Greig.

MECHANICS.

B. A. Ordinary.—*Class I.*—Ives and Ker and Rowat and Reynolds, equal; Campbell (E. M.); Boyce and McBurney (C.) and Macfarlane and Moore and Smith and Stevenson and Wyman (H. B.), equal. *Class II.*—Douglas and Willis, equal; Howard and McBurney (E. E.) and Trenholme and Watters, equal. *Class III.*—Brown and Henderson and Ross, equal; Ryan and Stephen and Watson, equal; Hinds and Russel, equal.

Third Year.—*Class I.*—Brooks; Gardner and Gilday, equal; Leney and McConnell and Meyer and Thompson, equal. *Class II.*—Dalgleish and Duff and Prudham and Reynolds and Thomas and Todd and Turner (H. H.) and Turner (W. D.), equal; Bates and Jordan and McGregor and Vineberg, equal. *Class III.*—Colby and Dover and Grace and Pearson and Ship and Tarlton, equal; Bishop and Place and Steen, equal.

ASTRONOMY AND OPTICS.

B. A. Ordinary.—*Class I.*—Ker and McBurney, equal; Armstrong and Ives and McKay and Rowat and Russel and Stevenson and Trenholme and Wyman (H. B.), equal; Boyce and Cameron and Douglas, equal. *Class II.*—Watson and Ryan, equal. *Class III.*—Moore and DuBoyce, equal.

Third Year.—*Class I.*—Brooks and Leney, equal; Prudham and Turner (W. D), equal; Dalgleish and Gardner and Ship, equal. *Class II.*—McGregor and McLeod and Place, equal; Tarlton and Thomas and Turner (H. H.) and Vineberg, equal. *Class III.*—Larmonth, Costigan; Bishop and Moore, equal.

EXPERIMENTAL PHYSICS.

B.A. Ordinary.—*Class II.*—Armstrong and Stephen, equal. *Class III.*—Mackay, Cameron.

Laboratory Course.

Class I.—Boyce and Howard and Mackay and Cameron and Stephen, equal; Armstrong and Browne and Ives and Ker, equal.

Third Year.—*Class I.*—Brooks. *Class II.*—Thompson.

Laboratory Course.

Class I.—Brooks and Thompson, equal.

GEOMETRY AND ARITHMETIC.

Second Year.—*Class I.*—Brown and Bruce and Edwards and Ells and McKenzie, and Robertson, equal; McClung and McDonald and Millar and Patch, equal; Cotton and Gardner and Henderson and Keith and McLeod and

Rice and Thompson and White, equal. *Class II.*—Duguid and Goodall and Hardisty and Hunter and Johnson (R D. L.) and King and Radford and Scrimger and Wainwright, equal ; Armstrong and Bates and Brodie and Holiday and Laurie and Lee and McDougall and McGill and Paterson, equal. *Class III.*—Burke and De Witt and Dixon and Lundie and Mackay and Potter, equal ; Baker and Holland and Johnson (H.) and Stewart and Parks and Reynolds, equal ; Cumming and Dorion and Finley and Hurst, equal.

First Year.—*Class I.*—Crowell and Ells and Nutter, equal ; Ainley and Brooks, and Chamberlain and Dey and Forbes and Hardy and Johnson and Rowell and Smith (L.) and Sangster, equal; Buckham and Dixon and Elder and Ogden and Rowat and Scott (G.W.) and Weinfeld, equal. *Class II.*—Anderson and Cleghorn and Cochrane and Cohen and Cooke and Grier and Holman and Lundie and Marcuse and Reford and Ritchie and Sever and Walker (J.J.), equal; Burke and Charters and Garlick and Goodhue and Horsfall and Jackson and Jeakins and Perley and Rorke and Scott (H. E.) and Walker (H.) and Willis and Woodley, equal. *Class III.*—Browne (J.) and Greig and Ireland and Mackinnon and Mitchell (W. G.) and Ness and Skinner and Tiffin, equal; Davies and Dickson and Kerr and McCormick and Shaw and Shepherd and Smith (N.), equal.

TRIGONOMETRY AND ALGEBRA.

Second Year.—*Class I.*—Robertson ; Edwards and Henderson and McClung, equal ; Bruce and Ells and Johnson (H.) and Keith and McKenzie and Patch, equal. *Class II.*—Armstrong and Brown and Holiday and McGill and Paterson, equal; DeWitt and Gardner and Goodall and Hunter and Laurie and McDonald and McLeod and Millar and Scrimger and Thompson and Wainwright and White, equal. *Class III.*—Bates and Brodie and Burke and Cotton and Cumming and Dixon and Finley and Hardisty and Johnson (R. D. H.) and Lee and Munroe and Rice and Mackay and Radford, equal ; Dorion and King and McDougall and Parks, equal ; Baker and Douglas and Duguid and Hurst and Lundie and Potter, equal.

First Year.—*Class I.*—Crowell ; Dey and Smith (L.), equal ; Scott (G.W.), Brooks Nutter, Chamberlain, Ainley, Holman, Johnson ; Cohen and Scott (H.), equal; Rowat, Ritchie, Ells, Smith (F. N.); Cochrane and Rorke, equal. *Class II.*—Dixon and Garlick, equal; Goodhue and *Walker (J.) and Marcuse, equal; Hardy and Buckham, equal; Jeakins, Weinfeld, Willis ; Grier and Lundie and Sever, equal ; Cooke and Shaw, equal ; Walker (H.); Rowell and Sangster, equal; Ness. *Class III.*—Skinner, Elder and Greig, equal ; McCormick, Anderson, *Davies ; Woodley and Jackson, equal ; Ireland, Charters, Dickson, McKinnon, Forbes, Horsfall ; Cleghorn and Mitchell (W. G.) and Harrower, equal ; Kerr, Baker, Tiffin, Burke, Reford.

HONOUR EXAMINATIONS IN MATHEMATICS AND NATURAL PHILOSOPHY.

B.A. Honours.—*First Rank.*—Mackay (Malcolm). *First Rank.*—Cameron (Mary T.).

Third Year.—*First Rank.*—Brooks (Harriet) (*Prize*).

Second Year.—*First Rank.*—McClung (Robert K.) (*Prize*); Bruce (Guy O. T.) (*Prize*), Edward (Archibald); *Second Rank.*—Johnson (H.).

First Year.—*First Rank.*—Nutter (*Prize*); Johnson (J. G W.) (*Prize*). *Second Rank.*—Dey.

FRENCH.

B.A. Ordinary.—*Class I.*—Archibald, Rowat, Young, Hinds, Smith; Rugg and Doull, equal. *Class II.* — Wyman (H. B.), Campbell, DuBoyce; McMaster and Ross, equal; Macfarlane.

Third Year.—*Class I.*—Colby, Seifert; Munn and Ship, equal. *Class II.*—Brooks Vineberg, Cameron, Gardner, Leney; Place and Todd, equal; Jordan, Tooke. *Class III.*—Tarlton; Pearson and McConnell, equal; Maltby, Reynolds, Steen, Dover; Costigan and Gilday, equal; Larmonth.

Second Year.—*Class I.*—Holiday, Potter, Finley, Johnson (H.), Wainwright, *DeCourtenay. *Class II.*—Cotton and Cumming, equal; Scrimger and Hunter, equal; Redpath and Brodie, equal; Henderson, Laurie, Johnson (R. de L.), McDougall, Burnett; Thompson and White, equal; Radford and Patch, equal; Armstrong; McGill and Bruce, equal; McDonald, DeWitt; Douglas and King, equal; Duguid and McClung and Dorion equal; Brown; Lundie and Ells, equal; Howden; Dixon and McKenzie, equal; Hurst and Gardner, equal. *Class III.*—Reynolds and Paterson, equal; Reid and Hardisty and Mackay, equal; Parks, Baker, Burke.

First Year.—*Class I.*—Dey, Goodhue, Nutter. *Class II.*—Garlick, Walker; Elder and Kerr and Marcuse and Sever, equal; Crowell; Smith (L.) and Cochrane and Dixon, equal; Mitchell (S.) and Sangster, equal; Weinfeld; Rorke and Lundie and Brooks, equal; Cooke and Davies, equal; Rowell and Jackson, equal; Ainley and Johnson, equal; Chamberlain, McCormick and Mackinnon and Mills, equal; Willis and Scott (H. E.) equal; Shepherd. *Class III.*—Baker and Cohen and Tiffin, equal; Ells and Ritchie, equal; Charters and Cleghorn and Reford and Rowat, equal; Greig and Ness and Perley and Grier, equal; Buckham and Holman, equal; Burke; Mitchell (W. G.) and Scott (Geo. M.), equal; Smith, (F. N.) and Walker (Jno. J.), equal.

GERMAN.

B. A. Ordinary.—*Class I.*—Young, Rugg, Cameron. *Class II.*—Reynolds, Willis. *Class III.*—McBurney.

Third Year.—*Class I.*—Cameron. *Class II.*—Grace and Munn and Colby, equal.

SECOND YEAR.—*Class I.*—Robertson, Edwards. *Class II.*—None. *Class III.*—Millar (W. K.), Goodall, Bates.

SECOND YEAR.—*Donalda Dept.—Class I.*—Finley ; Reynolds and McGill and King, equal ; Radford, Scrimger. *Class II.*—Johnson, Brodie, Reid. *Class III.*—Howden.

FIRST YEAR.—*Class I.*—Forbes and Weinfeld, equal ; Hardy. *Class II.*—Shaw Cohen. *Class III.*—Skinner.

FIRST YEAR.—*Donalda Dept.—Class I.*—Marcuse, Dey. *Class II.*—Brown, Rorke. *Class III.*—Willis, Kerr.

SEMITIC LANGUAGES.

B.A. ORDINARY.—*Class I.*—Wyman (D.B.), Mallinson. *Class II.*—MacLean (S.),

THIRD YEAR.—*Class I.*—Meyer (J.B.), (*Prize*), Prudham. *Class III.*—Bradshaw, Bates (G.E.), Alexander (J. L.), Lough.

SECOND YEAR.—*Class I.*—MacLeod (J. B.), (*Prize*), Rice, Charlesworth. *Class II.*—Blythe, Heal, Keith. *Class III.*—Lee, McGregor, Holland, Munroe, Boshart, Stewart (D.), Mick, Harding, MacLean (A. S.), Walker (P. A.).

FIRST YEAR.—*Class I.*—Bartlett, Secord, Scrimger. *Class II.*—Halpenny, Jeakins, Rowan. *Class III.*—Anderson (T. J.), Wright, Rey, Williamson, Anderson (R. S.), Woodley, Ireland, Campbell, MacInnes, Horsfall, Roberts, Runnells, Stephens (J. G.), Brunton.

GEOLOGY.

B.A. ORDINARY.—*Class I.*—Campbell (R. P.), Walbridge McBurney (Chas.) Smith, Reynolds, Brown, Campbell (E. M.), Saxe, McLean (S.), Henderson, MacFarlane, Hinds, Howard. *Class II.*—Ryan, Ross (E.), Russell, Willis, Watters, Reid, Douglass, Trenholme, Stevenson, Dorman, Mallinson, Watson, McBurney (Edith), McAteer. *Class III.*—Ross (A. R.), Boshart.

ZOOLOGY.

THIRD YEAR.—*Class I.*—Campbell (J. A. E.), Paterson, Jordan, Pearson, Reynolds, Munn, Seifert, Thomas, Turner (W. D.). *Class II.*—Dalgleish, and Dover, equal ; Heine, McGregor, Grace, *Down, Turner (H. H.), Worth, Colby. *Class III.*—Steen, *Bartlett, *Cairns, Blythe; Bates and Walker, equal ; Ross, Stephens, Shaw ; *Campbell (J. D.) and Larmonth, equal.

BOTANY.

SECOND YEAR.—*Class I.*—Holiday (*Prize*) and *Paterson (C. S.), equal ; *Going, Patch (*Prize*), McGill, McDougall ; Henderson and King and McKenzie and Reid, equal ; Keith ; Armstrong and Cotton and Radford and Rice and Wainwright, equal ; Duguid, Bates. *Class II.*—Brown and Brodie and Hurst and Parks and Reynolds and Scrimger, equal ; Potter ;

Holland and McLeod and Thompson, equal; Douglas and *McGregor and Robertson, equal; Burke and Lundie and Munroe, equal; Murphy (L. T.), Ells; Cumming and Dorion and Hunter, equal; Laurie; *Anderson and Finley and De Witt, equal. *Class III.*—Baker and Steen, equal; Hardisty; Hector and Johnson (H.) and Lee and Mackay, equal; McDonald, Stewart, Millar.

THIRD YEAR.—*Class I.*—Paterson (R. C.), Duff, *Travis, Campbell (J. A. E.), Carr; Colby and *Radford, equal; Cameron (F. M. T.). *Class II.*—*Going, Dover. *Class III.*—Maclaren, Bourke-Wright.

B.A. ORDINARY.—*Class I.*—Campbell, Lyman, Watters, Howard.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Cochrane. *Class II.*—Scott (G. W.), Rowan, Secord Williams. *Class III.*—Scott (H. E.), Charlesworth, Boshart; Colborne and Heeney, equal; Blythe, Ells, Elder; Cleghorn and Mick and Runnells equal.

DONALDA PRIZES FOR PHYSICAL CULTURE.

Graduating Class.—Rugg, Alice.

Undergraduates—Finley, Kathleen.

MORRIN COLLEGE.

INTERMEDIATE.

GREEK.—*Class I.*—Seifert.

LATIN.—*Class I.*—Seifert. *Class III.*—Jackson.

TRIGONOMETRY AND ALGEBRA.—*Class I.*—Seifert. *Class III.*—Jackson and Pocock, equal.

GEOMETRY AND ARITHMETIC.—*Class II.*—Pocock and Seifert, equal. *Class III.*—Jackson and Wheeler, equal.

LOGIC.—*Class I.*—Seifert. *Class II.*—None. *Class III.*—Pocock, Jackson, Tanner.

MODERN HISTORY.—*Class I.*—Seifert. *Class II.*—Jackson, Tanner. *Class III.*—Wheeler, Pocock.

FRENCH.—*Class I.*—Seifert. *Class II.*—Jackson.

GERMAN.—None.

HEBREW.—SECOND YEAR.—*Class II.*—Wheeler (J.), Pocock (Ch.).

STANSTEAD WESLEYAN COLLEGE.

INTERMEDIATE EXAMINATION.

GREEK.—*Class III.*—Rugg.

LATIN.—*Class III.*—Rugg.

GEOMETRY AND ARITHMETIC.—*Class III.*—Rugg.

TRIGONOMETRY AND ALGEBRA.—*Class II.*—Rugg.

LOGIC.—*Class I.*—None. *Class II.*—Rugg.

MODERN HISTORY.—*Class II.*—Rugg.

FRENCH.—*Class III.*—Rugg

FIRST YEAR.

GREEK.—*Class I.*—Hill (W.), Flint (R. A.).

LATIN.—*Class I.*—Hill (W.). *Class II.*—Flint (M.) and Flint (R.), equal. *Class III.*—Hill (M.).

GEOMETRY AND ARITHMETIC.—*Class I.*—Hill (W.), Flint (M.). *Class II.*—Flint (R.); Dixon and Hill (M.), equal.

TRIGONOMETRY AND ALGEBRA.—*Class I.*—Flint (M.). *Class II.*—Flint (R.). *Class III.*—Dixon, Hill (W.), Hill (M.).

ENGLISH LITERATURE.—*Class I.*—Flint (M.) and Hill (W.) and Hill (M.), equal. *Class II.*—Flint (R.).

FRENCH.—*Class II.*—Hill (W.). *Class III.*—Flint (M.) and Flint (R.) and Hill (M.), equal.

GERMAN.—*Class II.*—Hill (W.). *Class III.*—Flint (M.) and Flint and Flint (M.), equal.

Passed the Sessional Examination, Hill (W.), Flint (M.), Flint, (R.), Hill (M.).

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS, 1896-97.

ARCHIBALD, WILLIAM MUNROE.—Second Rank Honours in Natural Science.

BELL, JOHN WAINWRIGHT.—Second Rank Honours in Natural Science; Honours in Metallurgy.

BOVEY, EDWARD PALK.—Honours in Hydraulics.

MACBEAN, STANLEY LORNE.—Honours in Electrical Engineering.

MCKINNON, GEORGE DOUGLAS.—Governor General's Silver Medal; Honours in Hydraulics, Dynamics of Machinery and Mechanical Engineering Laboratory Work; British Association Prize of $25; Prize for Thesis on Hydraulic Press.

MACLEOD, GEORGE RODERICK.—Roderick Prize for Thesis on Belting.

OGILVIE, WILLIAM MORLEY.—Prize for Thesis on Survey of N. W. T. with Gold Mining Notes.

STOVEL, RUSSELL WELLESLEY.—British Association Gold Medal and Exhibition of $50; Honours in Hydraulics, Electrical Engineering and Electrical Laboratory Work; Prize for Thesis on Hydraulic Press.

THOMSON, HENRY NELLIS.—Second Rank Honours in Natural Science; Honours in Metallurgy; Prize for Thesis on the Mining and Dressing of Asbestos.

TURNBULL, JOHN MONCRIEFF.—First Rank Honours in Natural Science; Honours in Thermodynamics and Metallurgy.

THIRD YEAR.

Angel, Frederick W.—Prize for Mechanical Drawing.

Atkinson, Donald C. T.—Prize for Surveying Field Work.

Atkinson, William J.—Prize for Thesis on Hoisting Rock from Underground.

Butler, Percy.—Prizes for Chemical Laboratory and for Determinative Mineralogy.

Cape, Edmund.—Prize for Testing Laboratory Work.
Davis, Angus W.—Prize for Mining Drawing.
Eaves, Edmund.—Prize for Electrical Laboratory.
Laurie, Albert.—Prize for Machine Design.
MacLean, Thomas A.—Prize for Mining.
Maclennan, Frank W.—Prize for Electrical Engineering.
Macphail, William M.—Prize for Thesis on Boston Subway; Prize for Surveying Field Work.
McCarthy, George A.—Prize for Thesis on Intercolonial Plan & Notes; Prizes for Mathematics, Physics, Descriptive Geometry, Surveying, Theory of Structures, Mapping, Railway Work, and Cement Laboratory.
Patton, W. H.—Prize for Shopwork.
Scott, Arthur P., B.A. —Prize for Chemistry and Chemical Laboratory.
Thomas, Leonard E. L.—Prize for Dynamics of Machinery.
Waterous, Charles A.—Prize for Thermodynamics.
Young, George A.—Prize for Mining Engineering.

Passed the Primary Examinations.

(In Order of Merit.)

CIVIL ENGINEERING.

McCarthy, George A., Moncton, N.B.
Macphail, William M., Orwell, P.E.I.
Irving, Thomas T., Vernon River Bridge, P.E.I.
Matheson, Ernest G., Oyster Bed River, P.E.I.
*Bond, Frank L. C., Montreal.
*Benny, Walter W., D'Aillebout, Que.

ELECTRICAL ENGINEERING.

Eaves, Edmund, Montreal.
Cape, Edmund, Hamilton, Ont.
Sheffield, Charles, Kingston, Ont.
Maclennan, Frank W., Cornwall, Ont.
*Mackie, James D., Kingston Station, Ont.
*Scott, James H., Outremont, Que.
Archibald, Harry P., Antigonish, N.S.
*McLea, Ernest H., Montreal.

MECHANICAL ENGINEERING.

Laurie, Albert, Montreal.
Angel, Frederick W., St. John's, Newfoundland.
Waterous, Charles A., Brantford, Ont.
Thomas, Leonard E. L., Melbourne, Que.
Dean, Bertram D., Hamilton, Ont.

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*To pass Supplemental Examination.

Mackerras, John D., Kingston, Ont.
Davidson, J. Herbert, Montreal.
*McRae, John B., Ottawa, Ont.
*Patton, W. H., Huntingdon, Que.
Reaves, Campbell, Montreal.
*Beatty, David H., Sarnia, Ont.
*Bacon, Frederick T. H., Montreal.
*Simpson, J. Manley, Stratford, Ont.

MINING ENGINEERING.

Atkinson, Donald C. T., Etchemin, Que.
MacLean, Thomas A., Charlottetown, P.E.I.
Davis, Angus W., Montreal.
*Butler, Percy, Montreal.
Young, George A., Kingston, Ont.
*Ainley, Charles M., Almonte, Ont.
*Atkinson, William J., Glenboro, Man.
*Hillary, George M., Whitby, Ont.

PRACTICAL CHEMISTRY.

Scott, Arthur P., B.A., Montreal.
Drysdale, George A., Swansea, S. Wales, Eng.

SECOND YEAR.

Colpitts, Walter W.—Prizes in Architecture, Descriptive Geometry, Freehand Drawing, Mapping, Physics, Surveying, Surveying Field Work and Shop-work, 1st Ogilvy Prize.
Hutchinson, William S.--Prize in Chemistry.
Kirkpatrick, Stafford F.—2nd Ogilvy Prize.
McLaren, Archibald J.—Prize in German.
McLean, William B.—Prizes in Descriptive Geometry, Mathematics and Mechanism, 3rd Ogilvy Prize.
Molson, Kenneth.—Wicksteed Bronze Medal.
Whyte, John S.—Prize in Mechanical Drawing.

Passed the Sessional Examinations.

(In Order of Merit).

ARCHITECTURAL COURSE.

Colpitts, Walter W., Moncton, N.B.
Hyde, George T., Montreal.
*Peden, Frank, Montreal.
*McLeod, Norman M., Montreal.

* To pass Supplemental Examination.

CIVIL ENGINEERING.

Colpitts, Walter W., Moncton, N.B.
Fraser, Charles E., Montreal.
Gagnon, Louis F., Montreal.
*Gough, Richard T., Halifax, N.S.
*Van Horne, Richard B., Montreal.

ELECTRICAL ENGINEERING.

Grier, Arthur G., Montreal.
Shaw, John A., Montreal.
Fetherstonhaugh Edward P., Montreal. } equal
Archibald, Ernest M., Halifax, N.S. }
Pergau, Harry, Lyn, Ont.
Bowman, Archibald A., New Glasgow, N.S.
Fraser, Harold, Brockville, Ont.
*Cornwall, Clement A. K., Ashcroft, B.C
*Hyde, James C., Montreal.

MECHANICAL ENGINEERING.

McLean, William B., Pictou, N.S.
Young, William M., Renfrew, Ont.
Burgess, R. Earl, Wolfville, N.S.
Denis, Leopold, Montreal.
Wenger, Edgar I., Ayton, Ont.
*Wilson, Robert M., Montreal.
*Dargavel, James S., Elgin, Ont.
*Hickey, John V., Montreal.
*Whyte, John S., Osgood, Ont.
Davidson, William A., Peterboro, Ont.

MINING ENGINEERING.

Molson, Kenneth, B.A., Montreal.
Blaylock, Selwyn G., Danville, Que.
Yuile, Norman M., Montreal.
*Waller, George W., Bartonville, Ont.
*Nicholls, Henry G., Toronto, Ont.
*Preston, John, Toronto, Ont.
*Stevens, Angus P., Dunham, Que.
*Campbell, Norman M., Montreal.
*MacInnes, Henry W., Halifax, N.S.
*Moore, William M., Ottawa, Ont.
*Henderson, Richard A., Chilliwack, B.C.
*Morgan, Charles B., Hamilton, Ont.
*Bachand, George A., Montreal.

*To pass Supplemental Examination.

PRACTICAL CHEMISTRY.

McLaren, Archibald J., Montreal.
Hutchinson, William S., Montreal.

FIRST YEAR.

Allen, Samuel J.—2nd Fleet Workshop Prize.
Barber, Rene R.—Prize in Descriptive Geometry.
Byers, Archibald F.—2nd Fleet Workshop Prize.
Coote, Sydney R.—1st Fleet Workshop Prize.
Gillean, Robert H.—Prize in Chemical Laboratory Work.
Hamilton, George M.—Prize in Descriptive Geometry.
Hill, Lawrence.—1st Taylor Freehand Drawing Prize.
Nelson, George J.—Prize in Chemistry.
Shepherd, Harry L.—Prizes in Mathematics and Mapping; 2nd Taylor Freehand Drawing Prize.
Whiteway, William V. E.—Prize in English.

Passed Sessional Examinations.

(In Order of Merit).

Shepherd, Harry L., Brockville, Ont.
Gillean, Robert H., Montreal.
Nelson, George J., Montreal.
Robertson, Philip W. K., Mexico City, Mexico.
Allen, Samuel J., Maitland, N.S.
Smith, George B., Stratford, Ont.
Cowans, Frederick, Montreal.
Callaway, Frederick W., Minneapolis, Minn., U.S.A.
Ewart, George R., Kilauea, Kanai, Hawaiian Islands.
Barber, Rene R., Georgetown, P.E.I.
Hamilton, George M., Peterboro, Ont.
Hamilton, James, Peterboro, Ont.
Glassco, Jack G., Hamilton, Ont.
Hill, Lawrence, Montreal.
Duncan, Gailen R., Montreal.
Walker, Frank W., Montreal.
Arkley, Lorne M., East Angus, Que.
Ogilvie, Norman C., Montreal.
*Miller, Angus K., Bridgeburg, Ont.
*Maclaren, George McG., Ottawa, Ont.
Corriveau, Raoul de B., Iberville, Que.
Donaldson, Hugh W., Hamilton, Ont.
*Montgomery, George, Morrisburg, Ont.
*Fraser, John W., Charlottetown, P.E.I.
*Neville, Thomas P. J., Halifax, N.S.
Sise, Paul F., Montreal.

*To pass supplemental examination.

*St. George, Harry L., Montreal.
*Byers, Archibald F., Gananoque, Ont.
*Percy, Howard M., Montreal.
*Whiteway, William V. E., St. Johns', Newfoundland.
*Macmaster, Arthur W., Montreal.
*Cary, George M., Goderich, Ont.
*Coussirat, Henri A., Montreal.
*Osborne, J. Ewart, Toronto, Ont.

STANDING IN THE SEVERAL SUBJECTS.

HISTORY OF ARCHITECTURE.

SECOND YEAR.—*Class I.*—Colpitts and Fraser (C. E.) and Gagnon and Hyde (G. T.) and Peden and Staveley and Van Horne, equal. *Class II.*—McLeod (N.). *Class III.*—Gough and Parizeau, equal.

ENGLISH.

FIRST YEAR.—*Class I.*—Whiteway, McDonald (W.), Howard (R. F.), Hearn, Fraser (John W.), Ewart, Cary, Reeves (J. D.). *Class II.*—Arkley, Shepherd; Allen and Robertson, equal; Coote and Glassco, equal; Forman; Callaway and Sise (P.), equal; Smith (C. E.); Barber and Nelson, and Ogilvie (N. C.), equal; Maclaren (G. McG.) and Miller (A. K.), equal; Fournier; Cameron and Smith (G. B.), equal; Donaldson and Gillean, equal; Hamilton (J.). *Class III.*—Cowans, Montgomery, Pyke, Watson, Walker, Neville, Hamilton (G. M.), Byers; Hatchette and Osborne, equal; Duncan, Lacroix.

FRENCH.

SECOND YEAR.—*Class I.*—McLean (W. B.). *Class II.*—Fetherstonhaugh, Yuile, Hyde (G. T.), Grier. *Class III.*—Peden, Archibald (E. M.); Moore (W. M.) and Stevens, equal; Hickey, Young (W. M.); Blaylock and Van Horne, equal; Hutchinson, Pergau; Dargavel and Hyde (J. C.), equal; Burgess, Fraser (H.), McMillan, Wilson, Henderson, McLeod (N.).

FIRST YEAR.—*Class I.*—Hearn. *Class II.*—Glassco, Cary, Nelson, Duncan. *Class III.*—Arkley and Gillean, equal; Cowans, Montgomery; Barber and Walker, equal; Ogilvie (N. C.), Shepherd, Allen; Byers and Donnelly and Smith (G. B.), equal; Neville, Watson, Hamilton (G. M.), Sise (P.), Howard (R. F.), Hill, Forman, Donaldson.

GERMAN.

SECOND YEAR.—*Class I.*—McLaren (A. J.); Fraser (C. E.) and Shaw, equal; Colpitts and Whyte, equal. *Class II.*—Wenger, Gough, Bowman. *Class III.*—Preston and Waller, equal; Morgan, Davidson (W. A.), Nicholls.

FIRST YEAR.—*Class I.*—None. *Class II.*—Miller (A. K.), Millar (J. L.), Robertson, Callaway. *Class III.*—Maclaren, Cameron, Pyke, Osborne, Whiteway, Ewart.

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*To pass supplemental examination.

MATHEMATICS.

THIRD YEAR.—*Class I.*—McCarthy, Eaves, Cape, Macphail, Sheffield, Irving. *Class II.*—MacLean (T. A.) and Thomas, equal; Dean, Laurie, Atkinson (D. C. T.); Angel (F. W.) and Young (G. A.), equal; Davis, Waterous, Beatty, Matheson, Maclennan. *Class III.*—Butler, Reaves (C.), Hillary; Bond and McLea, equal; Ainley and Atkinson (W. J.) and Mackerras, equal; Archibald (H. P.) and Davidson (J. H.) and Scott (J. H.), equal; McRae.

SECOND YEAR.—*Class I.*—McLean (W. B.), Grier, Molson. *Class II.*—Burgess, Colpitts, Shaw, Hyde (G.), Young (W. M.), Denis (L.), Archibald (E. M.), Blaylock, Fetherstonhaugh, Pergau. *Class III.*—Fraser (C. E.), Fraser (H.); Dargavel and Davidson (W. A.), equal; Gagnon and Stevens and Yuile, equal; Ewan, Waller, Wenger, Hyde (J. C.), Nicholls, Cornwall, Bowman, MacInnes, *Wilson.

FIRST YEAR.—*Class I.*—Shepherd, Smith (G. B.), Robertson, Gillean. *Class II.*—Allen, Hamilton (J.), Cowans, Nelson, Hamilton (G. M.), Callaway, Ewart, Glassco, Percy, Barber, Hill, Ogilvie (N. C.). *Class III.*—Walker, Donaldson, Corriveau, Duncan, Arkley, Sise (P.), *Neville, Fraser (J. W.); *Maclaren (G. McG.) and *Montgomery, equal; *St George, †Miller (A. K.).

PHYSICS (*Theoretical and Practical*).

THIRD YEAR.—(*Electrical Engineering Course*).—*Class I.*—Cape, Sheffield, Maclennan, Archibald (H. P.). *Class II.*—Eaves, Simpson (J. M.). *Class III.*—Scott (J. M.) and Mackie, equal; McLea. (*Civil, Mechanical, Mining and Chemistry Courses*).—*Class I.*—McCarthy, Irving. *Class II.*—Laurie, Macphail; Davis and MacLean (T. A.), equal; Atkinson (D. C. T.), Butler; Mackerras and Waterous, equal; Angel (F. W.). *Class III.*—McRae, Young (G. A.), Bacon, Davidson (J. H.), Patton, Dean, Atkinson (W. J.), Hillary, Thomas, Ainley; Reaves (C.) and Matheson, equal.

SECOND YEAR.—*Class I.*—Colpitts, McLean (W. B.). *Class II.*—Grier, Blaylock, Fraser (C. E.), Shaw, Archibald (E. M.), Hutchinson, McLaren (A. J.), Wilson, Scott (A. P.), Molson (K.), Peden, Payne. *Class III.*—Young (W. M.), Van Horne, Whyte (J. S.), Denis (L.), Gagnon, Cornwall, Fetherstonhaugh, Preston, Wenger, Yuile, Hickey, Gough, Burgess, Campbell (N. M.), Bowman, McMillan, Henderson, Waller, Moore (W. A.) Morgan, Nicholls, Hyde (G. T.), Corriveau, Davidson (W. A.), Bachand Fraser (H.), Hyde (J. C.), McLeod (N.), Moore (W. M.).

CHEMISTRY.

FIRST YEAR.—*Class I.*—Nelson, Gillean, Byers, Robertson, Shepherd. *Class II.*—Osborne, Cowans, Allen, Scott (G. W.), Duncan, Glassco, Hamilton (J.), Ewart, Barber, Hill, Miller (A. K.), Fraser (John W.); Hearn and

*Supplemental in Mechanics.
† " " Algebra.

McDonald (W.), equal; Ogilvie (N. C.); Donaldson and Maclaren (G. McG.), equal; Arkley and Walker, equal. *Class III.*—St. George; Callaway and Toole, equal; Forman, McMaster, Sise (P.), Smith (G. B.); Corriveau and Hamilton (G. M.), equal; Whiteway, Montgomery, Cary, Neville.

CHEMISTRY (*Inorganic*).

FOURTH YEAR.—*Class I.*—None. *Class II.*—Suter.

CHEMISTRY (*Organic*).

THIRD YEAR.—*Class I.*—Scott (A. P.). *Class II.*—None. *Class III.*—Drysdale.

SECOND YEAR.—*Class I.*—McLaren (A. J.), Hutchinson. *Class II.*—None.

ASSAYING.

FOURTH YEAR.—*Class I.*—Thomson (H. N.), Bell, Turnbull, Archibald (W. M.). *Class II.*—Reinhardt, McDougall, Leach, Denis (T.). *Class III.*—Rutherford (S. F.), Dougall.

METALLURGY.

FOURTH YEAR.—*Class I.*—Turnbull, Thomson (H. N.), Bell, Archibald (W. M.). *Class II.*—Suter, Denis (T.), Reinhardt. *Class III.*—Rutherford (S. F.), O'Brien, Dougall, McDougall.

ZOOLOGY.

SECOND YEAR.—*Class I.*—None. *Class II.*—Molson. *Class III.*—Campbell (N. M.), Blaylock, Preston, Moore (W. M.), Yuile, Corriveau, MacInnes.

BOTANY.

SECOND YEAR.—*Class I.*—Hutchinson. *Class II.*—McLaren (A. J.).

GEOLOGY AND MINERALOGY (*Ordinary*).

THIRD YEAR.—*Class I.*—None. *Class II.*—McCarthy, Macphail, Matheson, Irving, Young (G. A.), Davis, Rutherford (S. F.), Atkinson (D. C.), MacLean (T. A.), Butler, McDougall, Ainley. *Class III.*—Atkinson (W. J.), Bond.

GEOLOGY (*Advanced*).

FOURTH YEAR.—*Class I.*—Turnbull. *Class II.*—Thomson (H. N.) and Bell, equal; Archibald (W. M.), McDougall, Reinhardt. *Class III.*—Rutherford (S. F.), Denis (T.), Dougall.

MUSEUM WORK IN GEOLOGY AND MINERALOGY.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Turnbull, Archibald (W. M.). Thomson (H. N.), Reinhardt, Bell. *Class III.*—Denis (T.), Dougall.

MINERALOGY (*Advanced*).

FOURTH YEAR.—*Class I.*—Turnbull. *Class II.*—Bell, Thomson (H. N.), Rutherford (G. S.), Suter. *Class III.*—Archibald (W. M.), Dougall, Denis (T.), Reinhardt.

THIRD YEAR.—*Class I.*—None. *Class II.*—Atkinson (D. C. T.), Butler, Young (G. A.). *Class III.*—MacLean (T.A.), Ainley, Davis, Rutherford (S. F.).

DETERMINATIVE MINERALOGY.

THIRD YEAR.—Butler, Davis, Atkinson (D.C.T.). *Class I I.*—Rutherford (S. F.), Young (G. A.); Ainley and MacLean (T. A.), equal; Atkinson (W. J.), McDougall, Reinhardt. *Class III.*—Denis (T.).

MINING.

THIRD YEAR.—*Class I.*—McDougall, MacLean (T. A.), Hillary. *Class II.*—Rutherford (S. F.), Atkinson (D. C. T.), Davis, Ainley, Reinhardt, Atkinson (W.J.), Young (G.A.), Butler, Denis (T.). *Class III.*—O'Brien.

SURVEYING.

THIRD YEAR.—*Class I.* — McCarthy, Davis. *Class II.*—Macphail, Irving, Atkinson (D. C. T.), Atkinson (W. J.); Rutherford (S. F.) and Young (G. A.), equal; MacLean (T. A.), Bond. *Class III.*—Matheson, Ainley, Butler; Benny and Hillary, equal.

SECOND YEAR.—*Class I.*—Colpitts, Hyde (G. T.), Molson; Fraser (C. E.) and McLeod (N.), equal. *Class II.*—Preston; Blaylock and Gough and Yuile, equal; Van Horne, Bachand, McMillan. *Class III.*—Peden, Gagnon; Campbell (N. M.) and Morgan, equal; Henderson; Corriveau and Parizeau, equal; Moore (W. M.), Nicholls, Waller, Stevens, MacInnes.

SURVEYING FIELD WORK.

THIRD YEAR.—Macphail, Atkinson (D. C. T.), Rutherford (S. F.), McCarthy. *Class II.*—Davis; Butler and Matheson, equal; MacLean (T. A.), Ainley, Irving, Hillary, *Young, Atkinson (W. J.). *Class III.*—Bond, Penny.

SECOND YEAR.—*Class I.*—Colpitts. *Class II.*—Corriveau, Bachand; Molson and Waller, equal; Gough and Peden, equal; Blaylock and Campbell (N. M.) and Henderson and Yuile, equal; McLeod (N.), McMillan, Hyde (G. T.). *Class III.*—Parizeau, MacInnes, Van Horne; Nicholls and Preston, equal; Morgan; Fraser (C. E.) and Gagnon, equal; Stevens, Moore (W. M.).

GEODESY.

FOURTH YEAR.—*Class I.*—None. *Class II.*—MacLeod (G. R.), Ogilvie (W. M.), Newcombe.

FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—Hill; Coote and Shepherd, equal; Hyndman; Gillean and Nelson and Paterson and Whiteway, equal; Callaway, Scott (H. E.), Byers and Donaldson and Reeves (J. D.) and Smith (G. B.) and Staveley

and Trenholme, equal ; Barber and Cary and Miller (A. K.), equal ; Allen. *Class II.*—Duncan and Montgomery, equal ; Angel (W. H.) and Hamilton (G. M.), equal ; Burwell and Cowans and Ewart and Howard (R. F.), equal ; Arkley and Cameron and Howard (L. O), equal ; Forman and Fraser (John W.) and Macdonald (R. B.) and Toole and Walker, equal ; Osborne, Smith (C. E.), McDonald (W.), Reford, Ogilvie ; Millar (J. L.) and Sise (P. F.), equal. *Class III.*—Fournier and Glassco and Maclaren (G. McG.) and Mowat, equal ; Hearn, Neville, Lacroix, Hamilton (J) ; Moncel and Percy and Pyke and Robertson and Watson, equal.

SECOND YEAR.—(*Architectural Course*).—*Class I.*—Colpitts, Hyde (G. T.). *Class II.*—Peden, McLeod (N.M.).

ARCHITECTURAL DRAWING.

SECOND YEAR.—*Class I.*—Colpitts, Peden. *Class II.*—Hyde (G. T.), McLeod (N.M.) *Class III.*—Gagnon, Gough.

FIRST YEAR.—*Class I.*—Coote and Staveley, equal. *Class II.*—None. *Class III.*—Byers.

DESCRIPTIVE GEOMETRY.

THIRD YEAR.—*Class I.*—McCarthy, Irving, Macphail, Matheson. *Class II.*—Benny, Bond.

SECOND YEAR.—*Class I.*—Colpitts and McLean (W. B.), equal ; Shaw ; Grier and Young (W. M.), equal ; Burgess and Denis (L.), equal. *Class II.*—Blaylock and Peden, equal ; Molson, Hyde (G. T.) ; Whyte (J. S.) and Wilson, equal ; Bachand and Moore (W.A.), equal. *Class III.*—Bowman and Coussirat and Fraser (H.), equal ; Pergau ; Stevens and Yuile, equal ; Campbell (N. M.), Fetherstonhaugh ; Gagnon and Hickey, equal ; Nicholls ; Davidson (W. A.) and Gough and Preston and Waller, equal ; Corriveau, Austin ; Dargavel and Fraser (C.E.), equal ; Henderson and Moore (W.M.), equal ; Wenger.

FIRST YEAR.—*Class I.*—Barber and Hamilton (G. M.), equal ; Gillean ; Hamilton (J.) and Hill and Shepherd, equal ; Nelson ; Coote and Ewart and Smith (G. B.), equal ; Paterson, Allen. *Class II.*—Cowans and Montgomery and Walker, equal ; Duncan, Fraser (John W.), Byers, Burwell ; Callaway and Robertson, equal ; MacMaster ; Miller (A. K.), and Whiteway, equal ; Hearn and Staveley equal ; Millar (J. L.), Kane, Percy, Maclaren (G. McG.) ; Cary and Neville, equal , Arkley. *Class III.*—Donaldson ; Hatchette and McDonald (W.), equal ; Ogilvie (N C.) ; Donnelly and Osborne and Sise (P. F.), equal ; Forman, Glassco, Smith (C. E.), Howard (R. F.), Toole ; Reeves (J. D.) and St. George, equal.

Class I.—Scott (H. E.). *Class II.*—None. *Class III.*—Reford.

MAPPING.

THIRD YEAR.—(*Civil Engineering Course*).—*Class I.*—McCarthy. *Class II.*—Bond, Macphail, Irving, Benny, Matheson.

SECOND YEAR.—(*Architectural Course.*)—*Class I.*—Peden, Hyde (G. T.), McLeod. (*Civil Engineering Course*).—*Class I.*—Colpitts. *Class II.*—Gagnon; Gough and Van Horne, equal; Fraser (C. E.), Parizeau, (*Mining Engineering Course*).—*Class I.*—Preston, Campbell (N. M.). *Class II.*—Corriveau; Blaylock and McMillan and Yuile, equal; Molson Bachand. *Class III.*—Morgan, MacInnes; Henderson and Waller, equal; Nicholls, Moore (W. M).

FIRST YEAR.—*Class I.*—Shepherd; Callaway and Whiteway, equal; Angel (W. H.) and Coote and Gillean and Hill and Smith (G. B.), equal; Hyndman and Staveley, equal; Reeves (J. D.); Byers and Cary and Howard (R. F.) and Nelson, equal; Montgomery; Cowans and Hamilton (G. M.) and Trenholme, equal; Barber and McDonald (W.), equal; Allen and Arkley and Duncan and Osborne, equal. *Class II.*—Maclaren (G. McG.) and Smith (C. E.) and Toole, equal; Cameron and Glassco, equal; Donaldson and Hamilton (J.) and Hatchette and Howard (L. O.) and Miller (A. K.), equal; Kane and Walker, equal; Ewart and Fournier and Sise (P. F.), equal; Burwell and Hearn and Millar (J. L.) and Ogilvie (N. C.), equal; Fraser (John W.), Forman; Lacroix and Percy and Robertson, equal; Mowat. *Class III.*—Macdonald (R. B.) and Neville and Watson, equal; Pyke.

MINING DESIGN.

THIRD YEAR.—*Class I.*—Davis, MacLean (T. A.), Butler. *Class II.*—Atkinson (W. J.), Atkinson (D. C. T.), Young (G. A.), Ainley, Hillary.

MECHANICAL DRAWING.

THIRD YEAR.—(*Electrical Engineering Course.*)—*Class I.*—Cape; Eaves and Maclennan, equal; Sheffield. *Class II.*—Mackie. *Class III.*—Scott (J. H.), McLea. (*Mechanical Engineering Course.*)—*Class I.*—Angel (F. W.), Laurie. *Class II.*—Mackerras and Patton and Thomas, equal; Davidson (J. H.) and Waterous, equal; Dean, Bacon. *Class III.*—Reaves (C.), Gisborne.

SECOND YEAR.—*Class I.*—Whyte (J. S.), Wilson, Young (W. M.), Denis. (L.) *Class II.*—Burgess and Grier, equal; Bowman and McLean (W. B.), equal; Moore (W. A.); Fetherstonhaugh and Wenger, equal; Archibald (E. M.). *Class III.*—Fraser (J. H.) and Hyde (J. C.) and Shaw, equal; Cornwall and Hickey, equal; Davidson (W. A.); Austin and Dargavel and Fraser (H.) and Pergau, equal; Coussirat.

DESIGNING.

FOURTH YEAR.—(*Civil Engineering Course*).—*Class I.*—MacLeod (G. R.) and Newcombe, equal. *Class II.*—Ogilvie (W. M.). (*Electrical Engineering Course*).—*Class I.*—Macdonald (J. E.) and Stovel, equal; Macdonald (P. W.), Blair. *Class II.*—Thomson (C.), Edward, Burnham. *Class III.*—Macbean, Davidson (S.), Walters, Packard. (*Mechanical Engineering Course.*)—*Class I.*—McKinnon. *Class II.*—Bovey, McKibbin; Symmes and White, equal; Paradis, Balfour, Connal; Chamberlain

and McLaren (D. T.), equal; Finnie. *Class III.*—Ferguson, Ross; Haycock and Sise and Yorston, equal; Drinkwater. (*Mining Engineering Course*). —*Class I.*—Bell, Thomson (H. N.), Turnbull. *Class II.*—Archibald (W. M.), Denis (T.), Dougall. *Class III.*—Rutherford (S. F.).

MACHINE DESIGN.

FOURTH YEAR.—(*Electrical Engineering Course*).—*Class I.*—Stovel. *Class II.*—Macdonald (J. E.). *Class III.*—Thomson (C.), Macdonald (P. W.), Packard, Burnham; Blair and Davidson (S.) and Macbean, equal; Edward, Walters. (*Mechanical Engineering Course.*)—*Class I.*—McKinnon. *Class II.*—White (F. H.), Connal. *Class III.*—Ross, McLaren (D. T.), Sise (C.), Haycock, Symmes, Finnie, McKibbin; Balfour and Bovey and Chamberlain and Drinkwater and Ferguson and Paradis, equal.

THIRD YEAR.—*Class I.*—Laurie. *Class II.*—Sheffield, Angel (F. W.), Maclennan, Mackie; Dean and Patton and Waterous, equal; Eaves; Cape and Simpson (J. M.), equal; Archibald (H. P.) and Beatty and Davidson (J. H.), equal. *Class III.*—Mackerras, Thomas, McRae, Scott (J. H.), Reaves (C.), Bacon.

DYNAMICS OF MACHINERY.

FOURTH YEAR.—(*Electrical Engineering Course*).—*Class I.*—Thomson (C.), Stovel. *Class II.*—Davidson (S.) and Macdonald (P. W.), equal; Macdonald (J. E.), Edward, Blair, Packard, Macbean. *Class III.*—Walters, Burnham. (*Mechanical Engineering Course.*)—*Class I.*—McKinnon, Connal. *Class II.*—White, Drinkwater; McKibbin and Paradis and Sise (C. F.), equal; Symmes, Finnie, Balfour, Bovey. *Class III.*—Chamberlain, Haycock, Ross, Campbell (A.), McLaren (D. T.), Ferguson.

THIRD YEAR.—(*Electrical and Mechanical Engineering Courses.*)—*Class I.*—Thomas, Sheffield, Angel, Waterous. *Class II.*—Maclennan, Eaves; Cape, Laurie, Dean, Mackie. *Class III.*—Davidson (J. H.); Archibald (H. P.) and McRae and Reaves (C.), equal; Scott (J. H.), Mackerras, *Patton.

KINEMATICS OF MACHINERY.

SECOND YEAR.—*Class I.*—McLean (W. B.) and Whyte (J. S.), equal. *Class II.*—Archibald (E. M.) and Grier, equal; Denis (L.), Hickey; Fraser (H.) and Shaw and Wilson, equal; Burgess, Young (W. M.), Fetherstonbaugh, Moore (W. A.). *Class III.*—Pergau and Wenger, equal; Davidson (W. A.), Dargavel; Bowman and Cornwall and Ewan, equal.

MECHANICAL ENGINEERING.

FOURTH YEAR.—*Class I.*—McKinnon. *Class II.*—Connal. *Class III.*—Balfour, Bovey and Symmes, equal; Campbell (A.), McKibbin, McLaren (D. T.); Chamberlain, Haycock, White (F. H.), Ross; Drinkwater and Finnie, equal; Ferguson and Paradis and Sise (C.), equal.

THERMODYNAMICS.

FOURTH YEAR.—*Class I.*—Turnbull, Macdonald (J. E.), Stovel, McKinnon, Thomson (C.), Archibald (W. M.), Connal. *Class II.*—Symmes, White, Macbean; McKibbin and Burnham, equal; Balfour and Macdonald (P. W.) and McLaren (D. T.) and Packard, equal; Bell and Thomson (H. N.), equal; Edward and Ogilvie (W. M.), equal; Bovey and Drinkwater, equal. *Class III.*—Ross, Paradis, Yorston; Blair and Chamberlain and Davidson (S.), equal; Newcombe, Haycock, Sise (C.); Dougall and MacLeod (G. R.), equal; Ferguson and Finnie and Walters, equal.

THIRD YEAR.—*Class I.*—Waterous, Thomas, Angel (F. W.), Reaves (C.). *Class II.*—Sheffield, Mackerras, Laurie. *Class III.*—Dean, McRae, Davidson (J. H.), Bacon.

THEORY OF STRUCTURES.

FOURTH YEAR.—(*Civil Engineering Course.*)—*Class I.*—None. *Class II.*—MacLeod (G. R.) and Ogilvie (W. M.), equal; Newcombe.

THIRD YEAR.—*Class I.*—McCarthy, Cape, Macphail, Irving, Laurie. *Class II.*—Eaves, Maclennan, Davidson (J. H.); Matheson and Patton, equal; Simpson (J. M.), Angel (F. W.); Bacon and Young (W. M.), equal; Atkinson (D. C. T.) and Mackie, equal; Dean and MacLean (T. A.) equal; McLea and Waterous, equal; Thomas, Beatty, Mackerras, Davis, Sheffield, Reaves (C.). *Class III.*—Bond, *Butler, Archibald H. P.), †Ainley, Atkinson (W. J.), †McRae, †Benny, †Scott (J. H.), *Hillary.

RAILWAY ENGINEERING.

FOURTH YEAR.—(*Civil Engineering Course*).—*Class I.*—None. *Class II.*—Newcombe, MacLeod (G. R.), Ogilvie (W. M.).

THIRD YEAR.—(*Civil and Mining Engineering Courses.*)—*Class I.*—McCarthy, Irving, Macphail, Matheson. *Class II.*—Atkinson (D. C. T.). *Class III.*—Butler, Bond, Ainley, Benny.

MUNICIPAL ENGINEERING.

FOURTH YEAR.—(*Civil Engineering Course*).—*Class I.*—MacLeod (G. R.). *Class II.*—Newcombe. *Class III.*—Ogilvie (W. M.).

THIRD YEAR.—(*Civil and Mining Engineering Courses.*)—*Class I.*—Young (G. A.), Macphail; Davis and Irving, equal; MacLean (T. A.) and McCarthy, equal; Atkinson (W. J.), Butler. *Class II.*—Hillary and Matheson, equal; Atkinson (D. C. T.), Ainley, Benny, Bond.

HYDRAULICS.

FOURTH YEAR.—*Class I.*—Stovel; Bovey and MacKinnon, equal; Thomson (C.). *Class II.*—Turnbull, Thomson (H. N.), Edward; Connal and Macdonald (P. W.), equal; Burnham, Archibald (W. M.), Ross; Bell and Chamberlain and Finnie, equal. *Class III.*—Davidson (S.) and Dougall, equal; Blair and White (F. H.), equal; Walters, Symmes; Macbean

†Supplemental in Paper I.
* " " II.

and Macdonald (J. E.), equal; Packard and McKibbin, equal; MacLeod (G. R), Ferguson, Sise (C.); Balfour and Yorston, equal; Newcombe, Haycock; Drinkwater and McLaren (D. T.), equal; Ogilvie (W. M.), Paradis, Pitcher.

ELECTRICAL ENGINEERING.

FOURTH YEAR.—*Class I.*—Macbean, Stovel. *Class II.*—None. *Class III.*—Thomson (C.), Blair, Macdonald (P. W.), Macdonald (J. E.); Packard and Pitcher, equal; Edward, Walters, Davidson (S.).

THIRD YEAR.—*Class I.*—Maclennan, Eaves, Cape. *Class II.*—Archibald (H. T.), Sheffield (C.), Dean. *Class III.*—Scott (J. H.).

ALTERNATING CURRENTS.

FOURTH YEAR.—*Class I.*—Macbean, Stovel, Thomson (C.). *Class II.*—None. *Class III.*—Walters, Edward, Packard; Macdonald (J. E.) and Macdonald (P. W.), equal; Burnham and Davidson (S.), equal; Blair.

DESCRIPTIVE ELECTRICAL ENGINEERING.

FOURTH YEAR.—*Class I.*—Stovel; Macbean (T. A.) and Burnham, equal. *Class II.*—Davidson (S.); Macdonald (P. W.) and Thomson (C.), equal. *Class III.*—Packard and Pitcher, equal; Walters and Blair, equal; Macdonald (J. E.), Edward.

LABORATORY WORK.

THIRD YEAR.—(*Cement Laboratory, Civil Engineering Course*).—*Class I.*—McCarthy. *Class II.*—Macphail, Matheson, Irving, Hillary, Bond. *Class III.*—Benny.

FOURTH YEAR.—(*Chemical Laboratory, Chemistry Course*).—*Class I.*—Suter.

THIRD YEAR.—(*Chemical Laboratory, Mining Engineering Course*).—*Class I.*—Butler, Atkinson (D. C. T.), MacLean (T. A.), Ainley, Young (G. A.), Davis. *Class II.*—Atkinson (W. J.). (*Chemistry Course.*)—*Class I.*—Scott. *Class II.*—Drysdale.

SECOND YEAR.—*Chemical Laboratory, Mining Engineering Course*).—*Class I.*—None. *Class II.*—McCarthy, Yuile, Blaylock, MacMillan, Nicholl; Molson and Waller, equal; Campbell (N. M.) and Preston, equal; Stevens, Bachand, MacInnes. *Class III.*—Morgan; Henderson and Moore (W. M.), equal. (*Chemistry Course*).—*Class I.*—Hutchinson, McLaren (A. J.).

FIRST YEAR.—(*Chemical Laboratory*).—*Class I.*—Gillean, Robertson, Maclaren (G. McG.), Cowans, Byers, Hill; Callaway and Ewart, equal; Duncan and Howard (R. F), equal; Ogilvie (N. C.); Neville and Scott (G. W.). *Class II.*—McDonald (W.) and Nelson, equal; Shepherd; Allen and Hamilton (J.), equal; Barber and Glassco, equal; Hearn and Smith (G. B.), equal; Paterson, Walker, St. George; Hamilton (G. M.) and Hatchette, equal; Miller (A. K.). *Class III.*—Osborne, Whiteway, Donaldson, Montgomery; Arkley and Cary, equal; Sise (P. F.), Forman Howard (L. O); Donnelly and Pyke and Toole, equal; Fraser (John, W.), Percy.

FOURTH YEAR.—(*Electrical Laboratory*).—*Class I.*—Stovel, Thomson (C.), Macbean. *Class II.*—Macdonald (P. W.), Edward, Macdonald (J. E.). *Class III.*—Burnham, Walters, Packard, Blair, Pitcher, Davidson (S.).

THIRD YEAR.—(*Electrical Laboratory*).—*Class I.*—Eaves. *Class II.*—Archibald (H. P.) and Mackie and Sheffield, equal; Cape and Maclennan, equal; *Class III.*—Scott (J. H.), Dean.

FOURTH YEAR.—(*Geodetic Laboratory*).—*Class I.*—None. *Class II.*—MacLeod (G. R.) and Newcombe and Ogilvie (W. M.), equal.

HYDRAULIC LABORATORY.

FOURTH YEAR.—(*Hydraulic Laboratory*).—*Class I.*—McKinnon; Balfour and Bovey and Connal and Thomson (C.), equal; Campbell, Edward; Bell and Stovel and Turnbull, equal; Drinkwater; Ferguson and Macbean and MacLeod and McKibbin, equal. *Class II.*—White; Paradis and Pitcher, equal; Chamberlain; Archibald (W. M.) and Thomson (H. N.), equal; Sise; Finnie and Macdonald (J. E.), equal; Ross. *Class III.*—Davidson (S.) and Macdonald (P. W.), equal; Yorston, Symmes; Ogilvie (W. M.) and Packard, equal; Blair, Dougall, Haycock, Newcombe; Burnham and McLaren, equal; Walters.

LABORATORY WORK.

FIRST YEAR.—(*Mathematical Laboratory.*)—*Class I.*—Callaway and Gillean, equal. Robertson, Shepherd; Arkey and Nelson, equal; Cowans and Ewart and Miller (A. K.), equal; Smith (G. B.), Barber, Hamilton (G. M.); Allen and Fraser (John W.) and Hamilton (J.), equal; Duncan and Forman and Hill and Walker, equal; Glassco and Montgomery, equal; Neville and Ogilvie (N. C.) and Pyke and Whiteway, equal. *Class II.*—Cary, Maclaren (G. McG.); Donaldson and McDonald (W.), equal; Osborne and Percy, equal; Howard (R. F.) and Millar (J. L.), equal; Byers; Howard (L. O.) and Sise (P.), equal.

FOURTH YEAR.—(*Mechanical Engineering Laboratory.*)—*Class I.*—McKinnon. *Class II.*—White (F. H.), Haycock, Connal, Symmes, Balfour, McKibbin, McLaren (D. T.). *Class III.*—Drinkwater and Finnie, equal; Bovey; Ferguson and Paradis and Ross and Sise and Chamberlain, equal.

FOURTH YEAR.—(*Physical Laboratory*) (*Electrical Engineering Course.*)—*Class I.*—Stovel. *Class II.*—Thomson (C.), Macbean, Davidson (S.), Macdonald (J. E.). *Class III.*—Packard, Burnham, Walters; Macdonald (P. W.) and Pitcher, equal; Edward, Blair.

THIRD YEAR.—(*Physical Laboratory*) (*Electrical Engineering Course*).—*Class I.*—Sheffield, Cape, Eaves. *Class II.*—Maclennan, Mackie, Scott (J. H.), Simpson (J. M.). *Class III.*—McLea.

FOURTH YEAR.—(*Testing Laboratory.*) (*Civil Engineering Course*).—*Class I.*—MacLeod G. R.). *Class II.*—Newcombe, Ogilvie (W. M.). *Class III.*—None. (*Mining Engineering Course.*)—*Class I.*—None.—*Class II.*—Thomson (H. N.), Dougall. *Class III.*—Turnbull, Bell, Archibald (W. M.),

THIRD YEAR.—*Testing Laboratory.*—*Class I.*—Cape, McCarthy. *Class II.*—Maclennan, Macphail, Laurie; Eaves and Irving, equal; MacLean (T. A.) and Scott (J. H.) and Simpson (J. M.), equal; Angel (F. W.) and

Waterous, equal; Patton, Matheson, Thomas; Dean and Sheffield, equal; Butler; Davidson (J. H.) and Young (G. A.), equal; Bacon and Davis and Mackerras, equal; Archibald (H. P.) and Bond, equal; Ainley Benny. *Class III.*—Reaves (C.); Atkinson (W. J.) and McRae, equal; Mackie, Atkinson (D. C. T.), Beatty, Hillary.

FOURTH YEAR.—(*Thermodynamic Laboratory*).—*Class I.*—Campbell and Drinkwater and McKinnon and Symmes and White (F. H.), equal; Connal McKibbin. *Class II.*—Bovey and Haycock and McLaren (D. T.), equal; Balfour, Paradis, Finnie. *Class III.*—Chamberlain and Ferguson, equal; Ross, Yorston, Sise (C).

SUMMER WORK.

FOURTH YEAR.—*Class I.*—MacLeod (G. R.) (*Latitude of Montreal*) and Ogilvie (W. M.) (*Survey of N.W. part of N.W.T. with Gold Mining Notes*), equal; Stovel (*Hydraulic Press*) and Thomson (H. N.) (*Mining and Dressing Asbestos*), equal; McKinnon (*Hydraulic Press*); Archibald (W. M.) (*Note on the extraction of gold by amalgamation as practised in Nova Scotia*) and Turnbull (*Explosives*), equal; Bell (*Explosives*) and Macdonald (J. E.) (*Hydraulic Press*) and Thomson (C.) (*Hydraulic Press*), equal. *Class II.*—Campbell (A.) (*Locomotive Repairs*); Balfour (*Hydraulic Press*) and Macbean (*Hydraulic Press*), equal; Finnie (*Rock Drills and Drilling*) and White (F. H.) (*Hydraulic Press*), equal; Bovey, (*Hydraulic Press*) and Dougall (*Explosives*) and Drinkwater (*Hydraulic Press*), equal; Connal (*Hydraulic Press*) and Edward (*Hydraulic Press*) and Newcombe (*Roof Stresses*) and Ross (*Hydraulic Press*) and Suter (*Destructive Distillation of Wood*), equal. *Class III.*—Ferguson (*Hydraulic Press*) and McKibbin (*Hydraulic Press*), equal; Macdonald (P. W.) (*Maintenance and Repair of Electric Cars*) and McLaren (D. T.) (*Hydraulic Press*), equal; Burnham (*Cement Testing Machines*) and Sise (*Maintenance and Repair of Electric Cars*) and Yorston (*Hydraulic Press*), equal; Chamberlain (*Holifax Tramway*) and Davidson (S.) (*Hydraulic Press*) and Packard (*Hydraulic Press*) and Pitcher (*Hydraulic Press*) and Walters (*Hydraulic Press*), equal.

THIRD YEAR.—*Class I.*—Macphail (*Boston Subway*) and McCarthy (*Intercolonial Railway Plan and Notes*), equal; Laurie (*Shafting*); Atkinson (W. J.) (*Hoisting Rock, etc., from underground*); Davis (*Newfoundland Railway*) and McRae (*Shafting*), equal; Atkinson (D. C. T.) (*Report of Survey*) and Bond (*Railway Location*) and Dean (*Shafting*) and Waterous (*Shafting*), equal; Patton (*Shafting*). *Class II.*—Hillary (*Prospecting with Prof. Miller of Kingston Mining School*) and Simpson (J. M.) (*Unloading Coal, with drawings*), equal; Mackie (*Shafting*) and MacLean (T. A.) (*Water System of Nova Scotia*), equal; Mackerras (*Shafting*) and Sheffield (*Shafting*), equal; Bacon (*Shafting*); Eaves (*Shafting*) and Scott (J. H.) (*Shafting*), equal; Angel (*Shafting*), Davidson (J. H.) (*Shafting*); Benny (*Shafting*) and Matheson (*Report of Survey*) and Thomas (*Shafting*), equal. *Class III.*—Cape (*Shafting*); Ainley (*Mineral Industries of Ontario*) and Reaves (*Shafting*), equal; Butler (*Account of Town of Chester*) and Irving (*Topographical Survey*) and Maclennan (*Shafting*), equal; Archibald (H. P.) *Tracing Telephone Generator*).

FOURTH YEAR.—*Class I.*—Campbell (A.) and White (F. H.), equal; Balfour, Connal; Finnie and McKinnon, equal; Drinkwater. *Class II.*—Haycock; McKibbin and Symmes, equal; Ferguson, McLaren (D. T.), Yorston, Chamberlain. *Class III.*—Sise, Paradis, Bovey.

THIRD YEAR.—*Class I.*—Patton, Mackie, Archibald (H. P.). *Class II.*—McRae, Scott (J. H.), Eaves, Waterous, Beatty, Mackerras, Gisborne, Cape, Laurie, Porcheron; Angel (F. W.) and Simpson (J. M.), equal; Maclennan. *Class III.*—Thomas, Dean, Sheffield, McLea; Bacon and Davidson (J. H.), equal; Reeves (C.), Corriveau.

SECOND YEAR.—(*Architectural, Civil and Mining Engineering Courses.*)—*Class I.*—Colpitts. *Class II.*—Gough, Hyde (G. T.); Morgan and Peden, equal; Donnelly, McLeod (N.); Gagnon and Hatchette, equal; Yuile Fraser (C. E.), Blaylock, Willard, McInnes, Campbell (N. M.); Kirkpatrick and Stevens, equal; Redpath. *Class III.*—Kane and McMillan and Nicholls, equal; Preston, Corriveau. (*Electrical and Mechanical Engineering Courses*).—*Class I.*—Young (W. M.), Fraser (Jas. W. Dargavel, McLean (W. B.), Denis (L.). *Class II.*—Wilson, Pergau, Wenger, Shaw; Burgess and Grier, equal; Cornwall and Hickey, equal; Fetherstonhaugh, Hyde (J. C.), Austin, Davidson (W. A.), Archibald (E. M.), Bowman, Waller, Fraser (H.). *Class III.*—Coussirat, Moore (W. A.).

FIRST YEAR.—*Class I.*—Whiteway, Fraser (John W.). *Class II.*—Hamilton (G. M.) and Miller (A. K.), equal; Angel (W. A.) and Donnelly, equal; Allen and Coote and Hatchette, equal; Arkley, Millar (J. L.); Gillean and Shepherd, equal; Nelson and Scott (G. W.) and Smith (G. B.), equal; Scott (H. E.), Hamilton (Jas.), Byers; Hill and Macdonald (R. B.) and Penhallow and Mowat and Walker, equal; Macdonald (W.); Barber; and Burwell, equal; Callaway and Montgomery, equal. *Class III.*—Cowans and Duncan and Redpath and Staveley, equal; Howard (L. O.) and McMaster, equal; Ewart and Kane and Morais and Reeves (J. D.), equal; Coussirat and Maclaren (G. McG.), equal; Donaldson and Forman, equal; Cary and Howard (R. F.), equal; Ogilvie (N. C.) and Smith (C. E.), equal; Lacroix and Sharpe, equal; Cameron and Neville, and Osborne and Percy, equal; Hearn, Fournier; Glassco and Robertson, equal; Toole, Sise.

Students of the University.

SESSION 1896-97.

McGILL COLLEGE.

FACULTY OF LAW.

FIRST YEAR

Baby, Henry, Jr.,	Montreal
Ball, William S.,	East Bolton, Q
Barlow, Joseph C.,	Montreal
Bercovitch, Peter,	Montreal
Carter, Wm. Frederick,	Cowansville, Q
Descarries, J. M. F.,	Notre Dame de Grace, Q
Drolet, Edmond B.,	Montreal
Ives, William C.,	Coaticooke, Q
Lynch, Walter H.,	Mansonvile, Q
McCabe, Ed. P. F.,	Windsor Mills, Q
McIver, William E.	Melbourne, Q
Robertson, Wm. G. M.,	Sherbrooke, Q
Saunders, Frank C., B.A.,	Montreal
Thomson, Arthur B.,	Montreal
Thornloe, Walter E. G.,	Sherbooke, Q
Vipond, Ernest E.,	Montreal
Whelan, Joseph,	Montreal

PARTIAL STUDENTS.

McLeod, Henry S.,	Dunstaffnage, P.E.I
Rees, Henry,	Montreal

SECOND YEAR.

Burnet, Arthur,	Farnham Centre, Q
Champoux, Charles,	Montreal
Clay, Samuel, B.A. (Cantab)	Montreal
Elliott, Henry J.,	Montreal
Hickson, James Claud, B A.,	Montreal
Honan, Cornelius,	Montreal
Howard, Erastus E., B.A.,	Frontenac, O
Iles, Charles,	Montreal
Kennedy, John R.,	Montreal
Marler, Herbert M.,	Montreal
Rogers, Reginald H.,	Montreal
Semple, George Hugh,	Montreal

THIRD YEAR.

Armstrong, Edgar N.,	Montreal
Bickerdike, Frank A. C.,	Lachine, Q
Bissonnette, J. E. A.,	St Hyacinthe, Q
Bond, William Langley,	Montreal
Boyd, Leslie H.,	Montreal
Brossoit, Numa P.	Beauharnois, Q
Cole, Frederick E.	Montreal
Cook, John Wilson,	Quebec
Dickson, Ed. H. Trenholme,	Trenholmeville, Q
Duclos, Arnold W.,	St Hyacinthe, Q
Ewing, Jos. Armitage,	Melbourne, Q
Jasmin, Pierre S.	Coaticooke, Q
Kneeland, Abner W.	S. Stukely, Q
Laverty, Francis Joseph,	Montreal
Mansur, Charles Henry,	Stanstead, Q
Montgomery, Geo. A.	Phillipsburg, Q
Smyth, William Oswald	Toronto, O
Stewart, Alexander M.,	Edinburgh, Scotland

FACULTY OF MEDICINE.

FIRST YEAR.

Almon, W. B.,	Halifax, N.S
Anton, D. L. S.,	Ireland
*Armstrong, J. W.,	Bristol, Q
Babcock, J. R.,	Brockville, O
Ballantyne, C. T.,	Ottawa East, O
Bishop, T. E.,	Harvey, N.B
Boira, W. E.,	Manchester, N.H
Brown, E. L.,	Chesterville, O
Buffett, C., B.A.,	Grand Banks, Nfld
Burrows, A. E.,	Kingston, O
Campbell, O. E.,	Apohaqui, N.B
Carnwath, J. E. M.,	Riverside, N.B
Cartwright, C.,	Kingston, O
Charlton, G. A.,	St. George, O
†Charron, A. C., B.A.	Ottawa, O
Clemesha, W. F.,	Port Hope, O
Coates, H. W.	Bass River, N.B
Coffin, J. D.,	Charlottetown, P.E.I
Cook, C. R.,	Montreal, Q
Coristine, W. H.,	Montreal, Q
Costello, A. E.,	Montreal, Q
Cowperthwaite, W. M.,	St. Johns, Nfld
Cox, J. R.,	Hull, Q
*Crowell, B.C.,	Yarmouth, N.S
Cunningham, F. J.,	Montreal
Dandurand, L. H.,	Montreal
Davis, W. P.,	Ottawa, O
Dick, J. J.,	Montreal, Q
*Dixon, J. D.,	Montreal, Q
*Dixon, W. E.,	Montreal, Q
Donaldson, A. S.,	Brockville, O
Donnelly, A. J., B.A.,	Sturgeon, P.E.I
Duffy, P. F.,	Charlottetown, P.E.I
Eagar, W. H.,	Dartmouth, N.S
*Edward, A. T.,	Montreal, Q
†Eliot, C. H.,	Milwaukee, Wis
Freeman, C. H., B.A.,	Milton, N.S
*Gardner, R. L.,	Brockville, O
Gibson, E.,	Campbellford, O
*Gilday, A. L. C.,	Montreal, Q
†Goltman, R.,	Montreal, Q
*Goodall, J. R.,	Ottawa, O
Gordon, A. E., B.A.,	Alberton, P.E.I
Gray, H. R. D., B.A.,	Montreal, Q
Gurney, S. C.,	Detroit, Mich
Hall, A. R.,	Washington, O
Hamilton, J. A.,	Onondaga, O
Harvie, S. K., B.A.,	Newport, N.S
Haszard, C. F. L.,	Charlottetown, P.E.I
Henry, C. K. P.,	Ottawa, O
Hiebert, G.,	Gretna, Man
Hill, W. H. P.,	Montreal, Q
Hughes, R. E.,	Ottawa O
Igoe, O. A.,	Tarrytown, N.Y
Jardine, J.,	Freetown, P.E.I
*Johnson, R. de L.,	Montreal, Q
Johnston, A.,	Leeds, Q
Jones, H. A., B.A.,	Moncton, N.B
Keating, B. H.,	Moore, O
Keating, H. T.,	Moore, O
Keefe, R. D.,	Iroquois, O
*Larmouth, G. E.,	Montreal, Q
Lawlor, F. E.,	Dartmouth, N.S
Lester, C. W.,	South Durham, Q
Lynch, J. B.,	Fredericton, N.B
Macpherson, C.,	St. Johns, Nfld
Martin, L. W.,	Warden, Q
Mitchell, V. E.,	Montreal, Q
Morrison, G. D.,	Vankleek Hill, O
Morrison, A. S.,	Montreal, Q
Morrow, J. J.,	Fergus, O
Murray, L. M.,	Truro, N.S
McAuley, A. G.,	Ventnor, O
*McConnell, R. E.,	Montreal, Q
McDiarmid, W. B.,	Maxville, O
McDonald, W. F.,	Westville, N.S
McKee, S. H., B.A.	Fredericton, N.B
McSorley, H. S.,	Montreal, Q
Ness, W.,	Howick, Q
O'Rielly, E. P., B.A.,	Hamilton, O
Painton, A. C.,	Mansonville, Q
Paterson, R. C.,	Montreal, Q
Paterson, W. F., B.A.,	Montreal, Q
Pattie, F. J.,	Vankleek Hill, O
Patton, J. W. T.,	New Glasgow, N.S
Payne, R. H.,	Jamaica, W.I
Pittis, W.,	Plainfield, N.J
Pope, E. L., B.A.,	Belleville, O
Porter, F. S.,	Powassan, O
Ramsay, W. A.,	Westmount, Q
Richard, F. A., B.A.,	Richibucto, N.B
*Ritchie, C. F.,	Montreal, Q
Ritchie, Thos. F.,	Halifax, N.J
Roub, G. W. A.,	Oxford, N.S
Roberts, A. B.,	Lanark, O
Ross, H., B.A.,	Montreal, Q
Rowley, W. E., B.A.,	Marysville, N.B
Rutherford, A. E.,	Montreal, Q
Scriver, E. F.,	Hamilton, O
Secord, E. R.,	Brantford, O
Shaughnessy, C. R.,	St. Stephen, N.B
Snetsinger, H. W.,	Moulinette, O
Stevenson, R. H.,	Danville, Q
Stewart, C. A.,	Dunvegan, O
Sullivan, M. T.,	Little Glace Bay, C.B
Supple, J. A.,	Pembroke, O
Thomas, J. W.,	Montreal, Q
Townshend, C.,	Parrsboro, N.S
Turnbull, J. A.,	Bear River, N.S
Turner, W. G., B.A.,	Quebec City, Q
*Walker, H.,	Beaulieu, Island of Orleans
Wheeler, F. C.,	Richford, Vt
*White, E. H.,	Montreal, Q
†Williams, W.,	Utica, N.Y
Wilmot, L. B.,	Oromocto, N.B
Wilson, W. A.,	Carleton Place, O

SECOND YEAR.

Alley, G. T., Charlottetown, P.E.I
†Ackerley, A. W., Fredericton, N.B
Allen, W. C., Hillsboro, N.B
Aylmer, A. L., Montreal, Q
Beadie, W. D., Lachine Locks
Beaulieu, J. F., Quebec, Q
Bonner, J. A., New York, N.Y
Bowles, C. T., Ottawa, O
Bradley, J. H., Charlottetown, P.E I
Brannen, J. P., Montreal, Q
Brennan, F. A., St Albans, Vt
Brown, W. F., B.A. Plattsburg, N.Y
Browning, W. E. Exeter, O
Burnett, W. B., B.A., Sussex, N.B
Burnett, P., Montreal, Q
Burris, J. S., Musquodoboit, N.S
Cameron, L. G., Cascades, Q
Casselman, P. C., Morrisburg, O
Conroy, R. J., Peterboro, O
Converse, R. D., New York City
Craig, J. E., North Gower, O
Cram, W. J., Carleton Place, O
Cummings, W. A., Buckingham, Q
Cunningham, A. A., Huntingdon, Q
Cuzner, G., Ottawa, O
Darche, C. E., Danville, Q
Drier, N. E., Richmond Corners, N.B
Dunn, C. B., Abercorn, Q
Dyer, E. O., B.A., Sutton, Q
Fairie, J. A., Montreal, Q
FitzGerald, C. T., Harbor Breton, Nfld
Fourney, F. W., B.A., Montreal, Q
Fuller, G. F. L., Sweetsburg, Q
Galbraith, W. S., Lethbridge, N.W.T
Gillis, E. G., Indian River, P.E.I
Gordon, A. H., St. John, N.B
Gray, C. F. A., Montreal, Q
Greene, E., Leitrim, O
Hall, W. T., Montreal, Q
Higgins, C. P., Victoria, B.C
Howden, G. T., Montreal, Q
Irving, L. E. W., Toronto, O
Jones, D. C., Maitland, O
Keenan, F. T. J., Lindsay, O
King, J. W. de C., Peterboro, O
Law, R., Ottawa, O
Leveque, J. T., St. Boniface, Man
Levy, A., B.A., Montreal, Q
Lineham, D. M. Calgary, N.W.T
Loeb, A. A., Montreal, Q
Logie, A. E., Chatham, N.B
Love, R. H., Carleton Place, O
Macdonald, J. S., Montreal, Q
Macoun, H. J. G., Montreal, Q
Martin, J. J., North Bay, O
Massie, J. C., Cowansville, Q
May, L. W., Ottawa, O
Mellon, P. B., Ottawa, O
Mousseau, E. A., Hull, Q
Murphy, E. F., St. John, N.B
MacKinnon, I. W., Charlottetown, P.E I
McCombe, J., Iberville, Q
McDougall, A., Kippen, O
McKay, J. G., Morewood, O
McKechnie, W. C., Marquette, Man
MacKenzie, C. A., Toronto, O
McNally, D. A., Abrams Village, P.E.I
McNaughton, F. M. A., B.A., Huntingdon, Q
McNiece, T., Carsonby, O
Nash, A. C., Ogdensburg, N.Y
Nicholson, F. J., B.A. Victoria, B.C
Noble, E. C., Potsdam, N.Y
O'Brien, J. R., B.A., Ottawa, O
O'Callaghan, M., Kars, O
O'Reilly, R., Ottawa, O
Paterson, A., B.A., Montreal, Q
Peake, E. P., B.A., Osbkosh, Wis
Reynolds, F. L., St John, N.B
Rochon, O. B.A., Rockland, O
Rodger, D. A., Genoa, Q
Ross, S. A., Hintonburg, O
Ross, W. J., Martintown, O
Ryan, G. H. W., Montreal, Q
Scott, J. F., Montreal South, Q
Shore, R. A. A., B.A., Toronto, O
Sparling, W. R., St. Mary's, O
Sparrow, C. J., Alexandria, O
Stansby, F. C., Valparaiso, Chili
Sutherland, W. H., Sea View, P.E.I
Symmes, C. R., Aylmer, Q
Tanner, C. A. H., Windsor Mills, O
Tansey, O. J., Montreal, Q
Thompson, G. H., New Glasgow, N.S
*Todd, J. L., Victoria, B.C
Tooke, F. T., B.A., Montreal, Q
Turnbull, T., Stratford, O
Whillans, H. A., Hintonburg, O
Wilkins, W. A., Montreal, Q
Wilkins, F. F., Montreal, Q
Witherbee, W.D., Potsdam, N.Y
Wood, J. H. M., Montreal, Q
Woodley, J. W., Rockland, O

THIRD YEAR.

Banfill, S. A., Magog, Q
Barlow, W. L., B.A., Montreal
Bartlett, G. W., Brigus, Nfld
Bayfield, G. E., Charlottetown, P.E.I
Beattie, R. F., Economy, N.S
Bell, John, New Glasgow, N.S
Blackett, J. W., B.A., Ormstown, Q
Brown, C. H., B.A., Carleton Place, O

Campbell, V. B., Finch, O
Corbet, G. G., St. John, N.B
Corcoran, J. A., Warden, Q
Covert. A M., Grand Manan, N.B
Cushing. H. B., B.A., Montreal
Dalpé, W. H., B.A., Montreal
Davidson, C., Montreal
Deane, R. B., Regina, N.W.T
Dickson, S. M., B.A., Montreal
Duncan, R. G., Bathurst, N.B
Duval, J. L., Grande Ligne, Q
Fagan, G A., B.A , North Adams, Mass
Fawcett, R. F. M., St. Andrews, Jamaica, W.I
Finnie, J. H., Montreal
Forbes, A. M. T., Montreal
Fox, A. C. L., Montreal
Francis, B., Sydney Mines, N.S
Fraser, F. C., B. A., Montreal
Galbraith, H. H., Westmount, Q
Gillies, B. W. D., Teeswater, O
Grace, N., Montreal
Green, F. W., Victoria, B.C
Harvey, F. W., B.A., Abercorn, Q
Houston, J. C., New Glasgow, P.E.I
Hudson, H. P., Chelsea, Q
Jamieson, W. R., Ottawa, O
Jones, F. B., Montreal
Lamb, J. A., Ottawa, O
LaRue, H. A., Portneuf, Q
Lynch, W. W., Knowlton, Q
Macauley, J. F., St. John, N.B
Macaulay, H. R., Montreal
Mooney, M. J., Inverness, Q
Morris, T. E., St. John, N.B
Moss, J. N., Montreal
Mussen, A. T., Lachine, Q
Myers, D. A., Bessemer, Mich
MacLean, J. N., Sarnia, O
McLean, J. R., B.A., Arnprior, O
McLennan, P. A., Lancaster, O
McLeod, J., Hartsville, P.E.I
McMurtry, A. L., Bowmanville, O
Ogilvy, C., B.A., Montreal
O'Shaughnessy, L. J., Oldham, N.S
Outhouse, J. S., B.A., St. Andrews, N.B
Patterson, F. P., St. Martins, N.B
Patterson, R. U., Baltimore, Md., U.S.A
Pigeon, W. H., Peterboro, O
Pittis, H., Plainfield, N. J
Peters, C. A., St. John's, Nfld
Powers, Martin, B.A., Ottawa, O
Rajotte, E. C. F., Montreal
Rose, W. O., Lakeville, P.E.I
Rutherford, R. M., Hawkesbury, O
Schwartz, H J., Quebec
Sihler, W. F., Simcoe, O
Smith, A. M., B.A., Petitcodiac, N.B
Snyder, A. E. W., Coaticook, Q
Stockwell, H. P., Danville, Q
Telford, R, Valens, O
Tiffany, G. S., Alexandria, O
Walker, P. McH., Grafton, N. Dakota
West, J., M.A., Montreal
Whitton, D. A., Ottawa, O
Wood, D. F., Faribault, Minn

FOURTH YEAR.

Aspland, W. H. G., M.D., Battle Harbor, Labrador
Barclay, J., Montreal
Bearman, G. P., Bells' Corners, O
Brears, C. F., Regina, N.W.T
Brown, W. K., Montreal
Brown, C. L., B.A., Port Lewis, Q
Burrell, R. H., Yarmouth, N.S
Campbell, I. G., D.V.S., Montreal
Clindinin, S. L., Brighton, O
Curran, T. J. J., Montreal
Darche, J. A., Sherbrooke, Q
Delmage, F. W., B.A., St. Marys, O
Doyle, J. J., Halifax, N.S
Dunbar. W. R., Abercrombie, N.S
Eberts, E. M. von, Winnipeg, Man
Edwards, A. F., Thurso, Q
Foster, G. M., Pembroke, O
Foster, A. L., Ottawa, O
Gadbois, F. A., Sherbrooke, Q
Gilday, F. W., Montreal
Gladman, E. A., Lindsay, O
Gordon, G. S., Halifax, N.S
Gourley, T. A., Eganville, O
Gurd, C. C., B.A., Montreal
Harding, E. S., B.A., Amherst, N.S
Harvey, F. C., B.A., Wolfville, N.S
Hayden, E. W., B.A., Cobourg, O
Hurdman, H. H., Ottawa, O
Jackson, F. S., Westmount, Q
Johnston, J. A., Emerald Junc , P.E.I
Johnston, W., Charlottetown, P.E.I
Jost, A. C., B.A., Guysboro, N.S
Keenan, C. B., Ottawa, O
Kerr, R. A., Montreal
Kirby, H. S., Ottawa, O
Laidley, I. H., Montreal
Laing, A. L., Montreal
Lang, A. A. J., Almonte, O
Lennon, H., B.A., Montreal
LeTouzel, J. R., Goderich, O
Lockary, J. L., St. Stephen, N.B
Long, C. B., Whitehall, N.Y
Lyster, H. F., Richmond, Q
McAllister, D. H., B.A., Belle Isle, N.B
McCallum, E. C., Kingston, O
McCabe, J. A., B.A., Windsor Mills, Q
Macdonald, D. J., Whycocomagh, C.B

Macdougall, G. P.,	Grand River, P.E.I
McDougall, J. G.,	Blue Mountain, N.S
McElroy, A. S.,	Richmond, O
McKinnon, F. W.,	Vankleek Hill, O
McLaren, R. W.,	St. Raphaels, O
McLennan, A. A.,	Lancaster, O
McLennan, D. A.,	Montreal
McNally, W. P.,	Abrams' Village, P.E.I
McRae, J. D.,	Glen Ellis, O
McRae, W. R.,	Baddeck, C.B
Malloch, N.,	Kenmore, O
Maloney, M. J.,	Eganville, O
Merkley, E. A.,	Morrisburg. O
Morris, C. H., B.A.,	Windsor, N.S
Morse, L. H., B.A.,	Bridgetown, N.S
Midgley, R. J.,	Woodstock, O
Milburn, J. A.,	Peterboro, O
Oppenheimer, S. S.,	Vancouver, B.C
Pallister, W. T.,	Guelph, O
Palmer, A. J.,	Buckingham, Q
Pennoyer, A. R.,	Gould, Q
Prodrick, W. S.,	Ottawa, O
Rice, F. E., M.D,	Sandy Cove, N.S
Ritchie, A. A.,	Dalhousie, N.B
Robert, G. C.,	Holyoke, Mass
Robertson, H. M.,	Chatham, O
Rodger, D. A.,	Genoa, Q
Rogers, F. E.,	Brighton, O
Roy, J. J.,	New Glasgow, N.S
Scott, W. T.,	Montreal
Seaton, J. S.,	St. John, N.B
Skeels, A. A., B.A.,	Montreal
Smith, H.,	Acadia Mines. N.S
Smith, R. A.,	Durham, O
Stanfield, H. M., B.A.,	Truro, N.S
Sterling, A.,	Fredericton, N.B
Sutherland, G. R.,	Hodson, N.S
Tierney, J. A.,	Fallowfield, O
Thomas, H. W.,	Montreal
Thomas, J. E.,	Montreal
Thompson, J. A.,	Kinnear's Mills, Q
Tozer, F. W.,	Newcastle, N.B
Trainor, J. B.,	Kelly's Cross, P.E.I
Wainwright, F. R.,	Montreal
Wainwright, S. F. A.,	St. Andrews, Q
Williams, E. J., B.A.,	Sherbrooke, Q
Wilson, F. W. E.	Montreal

FACULTY OF ARTS.

Undergraduates.

FIRST YEAR.

Name.	*School.*	*Residence.*
Ainley, Laurence,	Almonte H. S.,	Almonte, O
Anderson, Richd S,	Private Tuition,	Kenlis, Assa
Baker, Geo. P.,	St Paul's School, Concord, N.H.	Yarmouth, N.S
Burke, Maurice N.,	Bishop's Coll. S.,	Montreal
Chamberlain, Alex. F.,	Ottawa Collegiate Institute,	Ottawa, O
Charters, Herbert,	Montreal H. S.,	Montreal
Cleghorn, James Herbert,	Montreal H. S.,	Montreal
Cochrane, Donald,	Montreal H. S.,	Montreal
Cohen, Abraham,	Montreal H. S.,	Montreal
Cooke, H. Lester,	Montreal Collegiate Institute,	Montreal
Crowell, Bowman C.,	Milton H. S., Yarmouth, N.S.,	Yarmouth, N.S
Davies, Nelson C.,	McGill Normal School,	Bedford, Q
Dixon, James D.,	St. John's School,	Montreal
Elder, Robert.	Huntingdon Academy,	Trout River, Q
Ells, Sydney C.,	Ottawa Collegiate Institute,	Ottawa, O
Forbes, Wilfrid,	Prince of Wales Coll., P. E.I.,	Vernon River Bridge, P E.I.
Goodhue, Harry,	Institute Feller.	Danville, Q
Grier, Geo. W.,	Montreal Collegiate Institute,	Montreal
Hardy, Charles A..	Prince of Wales College, P.E.I.,	Fortune Cove P.E.I.
Horsfall, Frank L.,	Montreal Collegiate Institute,	Montreal
Ireland A. Austin,	Montreal Diocesan Theol. Coll.	Montreal

Name.	*School.*	*Residence.*
Jeakins, Charles E.,	Huntingdon Academy,	Huntingdon, Q
Johnson, J. Guy W.,	Montreal Collegiate Institute,	Montreal
Larmonth, Norman G.,	Private Tuition,	Ottawa, O
McCormick, Alex. S.,	Abingdon School,	Westmount, Montreal
Mackinnon, Cecil G.,	Bishop's College School,	Cowansville, Q
Mitchell, Walter G.,	Montreal High School,	Drummondville, Q
Ness, Wm.,	Huntingdon Academy,	Howick, Q
Nutter, J. Appleton,	Montreal H. S.,	Montreal
Ogden, Charles G.,	Three Rivers Academy,	Three Rivers, Q
Reford, Lewis,	Montreal Collegiate Institute,	Montreal
Ritchie, Charles F.,	Montreal H. S.,	Montreal
Rowat, T. Alex.,	Huntingdon Academy,	Athelstan, Q
Rowell, Arthur H.,	McGill Normal School,	Montreal
Scott, Geo. W.,	Montreal H. S.,	Montreal
Scott, Harry E.,	Napanee Collegiate Institute,	Napanee, O
Shaw, Leonard D.	Davenport School, St John, N. B.	St John, N.B.
Shepherd, Ernest G.,	Bishop's Coll. S.,	Montreal
Simpson, S. Huntingdon,		Vankleek Hill, O
Skinner Waldo W.	Davenport School & U. C. College,	St John, N.B
Smith, F. Napier,	Bishop's College S.,	Montreal
Tiffin, Jno. E.,	Montreal Collegiate Institute,	Pont du Sault
Trenholme, Harold W.,	Montreal Collegiate Inst.	Westmount, Montreal
Walker, Horatio,	Quebec H. S.,	L'Ile d'Orléans, Q
Weinfield, Henry,	Montreal H. S.,	Montreal
Wood, Percival S.,	Montreal H. S.,	St. Johns, Q
Woodley, Edward C.,	Montreal H. S.,	Montreal

SECOND YEAR.

Baker, G. Harold,	Berthier Grammar School,	Sweetsburg
Bates, C. J. L.,	Vankleek Hill H. S.,	L'Orignal, O
Brown, Walter G.,	Huntingdon Academy,	Athelstane, Q
Bruce, Guy O. T.,	Huntingdon Academy,	Huntingdon, Q.
Burke, Edmund A.,	Bishop's Coll. School,	Montreal
Burton, Henry T.,	Upper Canada College,	Montreal
Cotton, Chas M.,	Grande Ligne, Q.,	Sweetsburg, Q
Crack, Isaac E.,	St Francis Coll., Richmond,	Kingsbury, Q
Cumming, W. Gordon,	M. H. S.,	Montreal
DeWitt, Jacob,	Montreal Collegiate Institute,	Montreal
Dixon, Wm E.,	Montreal Coll. Inst.,	Montreal
Dorion, Walter A.,	McGill Normal School,	Montreal
Douglas, Fred. C.,	Montreal Collegiate Institute,	Montreal
Duguid, Robert C.,	M. H. S.,	Montreal
Edward, Arch. T.,	Montreal Collegiate Institute,	Montreal
Ells, Hugh,	Ottawa Collegiate Institute,	Ottawa
Ferguson, Colin C.,	Prince of Wales College, P.E.I.,	Marshfield, P.E.I.
Gardner, R. Lorne,	Brockville Coll. Inst.	Brockville, O
Goodall, Jas. R.,	Ottawa University,	Ottawa
Guthrie, Norman G.,	Guelph Coll. Inst.,	Guelph, O
Hardisty, Richard,		Montreal
Henderson, Ernest H.,	Huntingdon Academy,	Franklin Centre
Holland, Thos. B.,	Montreal Diocesan Theological Coll.,	London Eng
Hunter, Edwin N. McL.	Prince of Wales Coll. P.E.I.	Merrimac Mass. U.S.
Johnson, R. De Lancey,	Montreal Collegiate Institute,	Montreal
Keith, Henry J.,	Smith's Falls H. S.,	Smith's Falls, O
Laurie, Ernest,	M. H. S.,	Montreal
Lee, Hy. S.,	Private Tuition,	Kamloops, B.C
Lundie, John Alex.,	M. H. S.,	Montreal
Luttrell, Hy. P.,	M. H. S.,	Montreal

Name.	*School.*	*Residence.*
McClung, Robert K.,	Hamilton Collegiate Institute	Kingsbury, Q
McDonald, Paul A.,	Huntingdon Academy,	St. Agnes de Dundee
McKenzie, Bertram S.,	Coll. Inst, London, O.,	London, O
McLeod, John B.,	Prince of Wales College,	Springton, P.E.I.
Millar, W. Kinlock,	Pembroke H. S.,	Pembroke, O
Munroe Thos. A.,	Private Tuition,	Montreal
Patch, Frank S.,	M. H. S.,	Montreal
Rice, Horace G.,	Woodstock Collegiate Institute,	New Durham, O
Robertson, Lemuel,	Prince of Wales College, P.E.I.,	Marshfield, P.E.I
Stewart, Donald,	Almonte H. S.,	Dunbar, O
Thompson, Jas. E,	Coaticook Acad.	Coaticook
Wainwright, Arnold,	M. Coll. Inst.,	Montreal
White, E. Hamilton,	Abingdon School, Montreal,	Montreal

THIRD YEAR.

Name.	*Residence.*	*Name.*	*Residence.*
Bates, Geo. E.,	Lanark, O	Maclaren, A. Henderson,	Huntingdon, Q
Bishop, W. Gordon,	Montreal	Meyer, John B.,	Montreal
Blyth, R. B.,	Belwood, O	Moore, Percy T.,	Montreal
Bruce, John C,	Huntingdon, Q	Munn, D. Walter,	Quebec
Campbell, J. Aug. Ewat.,	Montreal	Paterson, Robert Childs,	Montreal
Colby, Jno. Child,	Stanstead, Q	Place, Edson G.,	Millington, Q
Costigan, Jno. Wm.,	Montreal	Prudham, W. W.,	Waterdown, O
Dalgleish, R. Wallace,	Huntingdon, Q	Ross, Arthur B.,	Montreal
Duff, Alex. H.,	Montreal	Ship, Moses L.,	Montreal
Gardner, Wm. A.,	Huntingdon, Q	Stephens, J. G.	New Rocklands, Q
Gilday, Arch. L. C.,	Montreal	Tarlton, B. B.,	Montreal
Grace, Arch. H.,	Montreal	Thomas, J. Wolferstan,	Montreal
Heine, M. Casewell,	New York City	Thompson, Jas. R.,	Kinnear's Mills, Q
Larmonth, G. E,	Montreal	Todd, J. L.,	Victoria, B. C.
Leney, John Muirhead,	Montreal	Turner, Henry H,	Appleton, O.
McConnell, Robert Ernest,	Montreal	Turner, Wm. D.,	Appleton, O
McGregor, Jas. Albert,	Huntingdon, Q	Vineberg, Abraham,	Montreal
McLeod, Hy. S.,	Dunstaffnage, P. E. I	Worth, Fulton J,	Wellington, B.C

FOURTH YEAR.

Archibald, Sam. G,	Montreal	Macfarlane, Lawrence,	Montreal
Armstrong, W. J. Alex.,	Bristol, Q	Mackay, Malcolm,	Montreal
Ashdown, Chas. R.	Toronto, O	Macmillan, Talm. R.,	Newhaven, P.E.I
Boyce, W. S. P.;	Norham, O	Mallinson, Stephen H.,	London, Eng
Browne, John G.	Montreal	Moore, Wm.,	Lachute, Q
Campbell, Ed. M.,	Inverness, Q	Ross, Alex. R.,	Montreal
Campbell, Roland P.,	Westmount, Q	Rowat, Donald McK.,	Athelstan, Q
Crack, H. Arthur,	Kingsbury, Q	Russel, Colin K.,	Montreal
DuBoyce, Percy C.,	West Bolton, Q	Ryan, Wm. A.,	Three Rivers, Q
Douglas, Robert J.,	Earltown, N.S	Saxe, John G.,	Montreal
Howard, A. Campbell P.,	Montreal	Steacy, Fred. W.,	Montreal
Ives, Charles K.,	Stanstead, Q	Stevenson, James,	Montreal
Johnston, Wallace,	Redgrave	Trenholme, Arthur K.,	Westmount, Q
Ker, Robert Harold,	Montreal	Watson, Wm.	Kingsbury, Q
McBurney, Chas.,	Sawyerville, Q	Watters, Wm. H.,	Lynn, Mass, U. S
McLean, Sam.,	Bolsover, O	Willis, John J.,	Montreal
McLeod, Donald M.,	Springton, P.E.I	Wyman, Dan. B.,	Chute au Blondeau, O
McMaster, Andrew R.,	Montreal	Wyman, Hiram B.,	Chute au Blondeau, O

Partial Students.

A Student who is not an Undergraduate, or Graduate, is called a Partial Student.

The figure (1), (2) or (3), prefixed to a name, indicates that the Student takes a class in the corresponding year as well as in that where the name is found.

FIRST YEAR.

Anderson, Fred. J., Montreal
Ascah, R. Gordon, Gaspé Peninsula, Q
Bartlett, Leonard, South London, O
Blythe, Jno. J., Montreal
Boshart, Wm. P, Ottawa, O
Boyd, Robt. M., Belleville, O
Brown, Asa I., Sombra, O
Brunton, J. N., Marvelville, Russell Co., O
Cairns, Hugh G., Sawyerville, Q
Carruthers, Chris., Aylwin, Q
Charlesworth, J. W., Sheffield, Eng
Colborne, Jas. H. Hyndman
Condie, Geo. D.,
DuBois, H. J., SteElizabeth, CoJolietteQ
Dickson, W. Howard, Pembroke, O
Ereaux, J. S.,
Farrell, Chas., Montreal
Ferguson, Jas. R., Yarmouth, N. S.
Forsyth, Sam, St Johns, Newfoundland
Greig, Jno. G., Montreal
Halpenny, E. Wesley, Bear Brook
Harrower, Geo. W., Montreal
Heeney, Wm Bertal, Danford Lake, Q
Holland, Newman H., Montreal
Hopkin, Robt., Montreal
Hosmer, Elwood B., Montreal
Howkins, Chas. W., Fitch Bay, Q
Johnston, Jno. L., Toronto, O
Lapointe, Cleophas,
Lough, D. A., Ottawa
MacInnes, F. S., Kinloss, Lucknow, O
Mick, Daniel, Micksburg, O
Mitchell, Sydney, Montreal
Morais, G.E.E., Kingston, Jamaica, W I
Pack, Edgar W., Toronto, O
Phelan, M. A., Montreal
Reford, Wm.
Reinhardt, A. E., Montreal
Roberts, T. E., Lancashire, Eng
Rowan, W. L., Pembroke, O
Runnells, Arthur E., Egypt, Q
Secord, Albert, New Durham, Q
Shepherd, Harry Laurence
Smith, G. S., Toronto, O
Stevenson, H. R.
Walker, Jno. J., Ormstown
Williams, W. J., Montreal
Williamson, Arthur W., Shawbridge
Wright, J. H., Montreal

SECOND YEAR.

(1) Anderson, Fred. J.
(1) Bartlett, Leonard
Bean, Benj.
(1) Blythe, Jno. J.
Bonin, Alex. F, Montreal
(1) Boshart, Wm. P.
Bradford, Wm. G., Montreal
(1) Cairns, Hugh G.
Cameron, Arch. G., Montreal
Campbell, J. D., Leaksdale, O
(1) Charlesworth, J. W.
Clarke, C. F. E., St. Thomas
(1) Colborne, Jas. H.
Down, Geo. W., England
Dowson, J. L. Bishop Auckland, Eng
Greaves, R. H, Liverpool, Eng
Harding, Albert E., London, O
Heal, G. Edgar, St. Johns, Nfld
(1) Heeney, Wm. Bertal
Hutchison, Lyman W., Ottawa
Jones, Silas H.
McGregor, Geo.
McLean, A.S., Scarp, Tarbert Harris, Scot
Mackay, Hugh, Montreal
(1) Mick, Daniel,
(1) Pack, Edgar W.
Paterson, Chas. S., Montreal
Redpath, J. C., Montreal
Rey, Jean
Stewart, Jas. T., Athelstan
Vinond, E. E., Montreal
Walker, Luther J., Kensington, Q
Wilkinson, Geo. A., Montreal
(1) Williamson, Arthur W.

THIRD YEAR.

Alexander, A. O., Ridgetown, O
Alexander, J. L., Bowmanville, O
(2) Anderson, Fred J.
(2) Bartlett, Leonard
(2) Bean, Benj.
(2) Blythe, Jno. J.
(2) Boshart, Wm. P.
(2) Bradford, Wm. G.
Bradshaw, Jas. E, Valleyfield, Q
(2) Cairns, Hugh G.

(2) Cameron, Arch. G.
(2) Campbell, J. D.
(2) Charlesworth, J. W.
(2) Colborne, Jas. H.
(2) Down, Geo. W.
(2) Dowson, Jas. L.
(2) Greaves, R. H.
(2) Heal, G. Edgar.
(2) Jones, Silas H.
(1) Lough, D. A.
Mair, Jno. A., Lanark, O
(2) Mick, Daniel
(2) Pack, Edgar W.
Reid, Leslie W., Aberfoyle, O
(1) Roberts, T. E.
(1) Rowan, W. L
(1) Runnells, Arthur E.
(2) Walker, Luther J.
(2) Wilkinson, Geo. A.
(1) Williams, W. J.
(2) Williamson, Arthur W.

FOURTH YEAR.

(3) Alexander, A. O.
(3) Alexander, J. L.
(3) Anderson, Fred. J.
(3) Blythe, Jno. J.
(2) Boshart, Wm. P.
(3) Bradshaw, Jas. E.
(1) Brown, Asa I.
Brown, W. T., Smith's Falls, O
(1) Brunton, Jno. N.
(3) Charlesworth, J. W.
(2) Clarke, C. F. E.
Crombie, Geo. L., Fort Coulonge, Q
Dorman, J. A., Seeley's Bay, O
(3) Dowson, Jas. L.
Gilmour, F. W., Almonte, O
(3) Greaves, R. H
(1) Halpenny, E. Wesley
Halpenny, William, Smith's Falls, O
(3) Heal, G. Edgar
McAteer, T. G., Stayner, O
McGuire, Jno. M., Stratford, O
(2) MacLean, Allan S.
(3) Mair, Jno. A.
Monsinger, Hy., Winslow, Lincoln Co., O
(3) Reid, Leslie W.
(3) Roberts, T. E.
(3) Williams, W. J.

B.A.

Bremner, Wm., Ottawa East
Graham, Angus A., Glencoe, O
Scrimger, J. Tudor, Montreal
Townsend, Wm. McN., Travellers' Rest P. E. I.
Wallace, Jas. M, North Gower, O
Young, Hy., Blakeney, O

DONALDA DEPARTMENT.

SPECIAL COURSE FOR WOMEN.

Undergraduates.

FIRST YEAR.

Name.	*School.*	*Residence.*
Brooks, Elizabeth A.,	McGill Normal School,	Montreal
Buckham, Helen D.,	Huntingdon Academy,	Huntingdon, Q
Dey, Mary Helena,	Simcoe H. S.,	Simcoe, O
Garlick, Edythe A.,	M. G. H. S.,	Montreal
Holman, Caroline E.,	Prince of Wales Coll., P.E.I.	Summerside, P.E.I.
Jackson, E. Gertrude,	M.G.H.S.,	Montreal
Kerr, Grace I.,	Trafalgar Institute, Montreal,	Montreal
Lundie, Jessie F.,	Montreal Collegiate Institute,	Montreal
Marcuse, Bella,	M G.H.S.,	Danville, Q
Murphy, Christian C.,	McGill Normal School,	Montreal
Perley, Frances B.	Girls' H.S. St.John N. B.,	Upper Maugerville, Sunbury Co., N.B
Rorke, Helen,	St. Thomas H. S.,	South Woodslee, O
Sangster Elizabeth,	McGill Normal School, Montreal,	Sherbrooke, Q
Sever, Hannah D.,	McGill Normal School, Montreal,	St. Chrysostome Q
Sharpe, Ellen,	C. M College, New Westminster,	Agassiz, B.C
Smith, Lillian A.,	Morrisburg Collegiate Institute,	Morrisburg
Willis, Elizabeth I.,	Dunham Ladies' College,	Westmount, Montreal

SECOND YEAR.

Name.	*School.*	*Residence.*
Armstrong, Catherine,	McGill Normal School,	Bristol, Q
Brodie, Margt.,	Westmount Acad.,	Montreal
Finley, Kathleen E.,	Trafalgar Institute,	Montreal
Holiday, Annie,	Montreal Collegiate Institute,	Rawdon, Q
Howden, Jennie E.,	Stanstead Wesleyan College,	Montreal
Hurst, Isabel M.,	M. G. H. S.,	Montreal
Johnson, Helena,	Private Tuition,	Montreal
King, Christina C.,	Sarnia Collegiate Institute,	Sarnia
McDougall, Louise,	M. G. H. S.,	Montreal
McGill, I. Winifred,	Ottawa Collegiate Institute,	Ottawa, O
Parks, Margaret,	Victoria School, Mt. Pleasant,	St. John, N. B
Potter, Lucy E.,	McGill Normal School,	New York, N.Y
Radford, Janet I.,	M. G. H. S,	Montreal
Reid, Lena McK.,	M. G. H. S.,	Montreal
Reynolds, Elizabeth E. M.,	Gananoque High School, Ont.,	Montreal
Scrimger, Anna M.,	Trafalgar Institute,	Montreal

THIRD YEAR.

Name.	*Residence.*	*Name.*	*Residence.*
Bourke-Wright, K. M. H.	Ireland	Pearson, Katie C.,	Montreal
Brooks, Harriet,	Sherbrooke, Q	Reynolds, M. Edna,	Montreal
Cameron, Frances M. T.,	Kingston, O	Seifert, Ethel M.,	Quebec
Carr, Muriel B.,	St. John, N.B	Shaw, A. Louise,	Montreal
Dover, Mary V.,	Peterboro, O	Steen, Alice G.,	Farran's Point, Q
Jordan, Florence M.,	Montreal	Walker, Laura F. M.,	Montreal

FOURTH YEAR.

Cameron, Mary T.,	Kingston, O	Reynolds, Florence,	Montreal
Doull, Ethel M.,	Montreal	Ross, Elizabeth,	Brucefield, O
Galt, Annie P.,	Montreal	Rugg, M. Alice,	Stanstead, Q
Henderson, Grace,	Montreal	Smith, Annie Louise,	Montreal
Hinds, Charlotte,	Actonvale, Q	Stephen, Jennie,	Ottawa, O
Holden, Margaret L.,	St. John, N. B	Walbridge, Mabel H.,	Mystic, Q
McBurney, Edith E.,	St. Lambert, Q	Young, Laura A.,	Charlottetown, P.E.I

Partial Students.

FIRST YEAR.

Anderson, Alice G.,	Ottawa, O	Loud, Edith M.,	Montreal
Bannister, Mabelle A.,	Montreal	Lovejoy, Clara,	Montreal
Browne, A. M.,	Montreal	Mattice, J. Corisande,	Montreal
Browne, Joanna,	Montreal	Mills, Edna G.,	Montreal
Browne, Katherine,	Montreal	Mock, Lilian,	Montreal
Campbell, Marion,	Montreal	Molson, Mabel,	Montreal
Carlyon, Cecile M.	Hants, Eng	Mulholland, Minnie W.,	Montreal
Coussirat, Ada M.,	Montreal	Murphy, Louise I.,	Montreal
deCourtenay, Alice W.,	Montreal	Murphy M. Grace,	Montreal
Edgar, Katie,	Montreal	Parsons, Bertha,	Montreal
Fraser, Winifred,	Montreal	Pillet, Blanche,	Montreal
Gilmour, Edith M.,	Montreal	Redpath, Helen L.,	Montreal
Lamb, Mary L.,	St. Andrews East, Q	Rose, Mabel,	Montreal
Letendre, Minnie B.,	Montreal	Rothwell, Grace W.,	Montreal

SECOND YEAR.

Allan, A. S.,	Montreal
Allan, Beatrice I.,	Montreal
(1) Bannister, Mabelle A.	
(1) Browne, A. M.	
Buchanan, Alice,	Montreal
Burnet, Mabel,	Montreal
(1) Campbell, Marion.	
(1) Carlyon, Cecile M.	
Donahue, Eva,	Montreal
(1) Edgar, Katie.	
Fulton, Alice,	Montreal
Gault, M. Florence,	Montreal
Going, E. Maud,	
Granger, Sarah,	Montreal
Johnson, C.,	Montreal
King, Ethel,	Montreal
(1) Letendre, Minnie.	
(1) Loud, Edith M.	
Lovell, Flora,	Montreal
(1) Lovejoy, Clara.	
(1) Mock, Lilian,	
(1) Molson, Mabel,	
Molson, Naomi,	Montreal
Munn, J. Isobel,	Montreal
(1) Murphy, Louise I.	
(1) Murphy, M. Grace.	
Nowers, Winifred,	Montreal
Oswald, Bell,	Montreal
Porter, Sarah H.,	Montreal
Reford, Katie F.,	Montreal
Rithet, Gertrude A.,	Victoria, B.C
(1) Rose, Mabel.	
Smith, E. May,	Montreal
Williams, Violette M.,	Montreal

THIRD YEAR.

Armstrong, May,	Montreal
(1) Coussirat, Ada M.,	
(2) Going, E. Maud.	
Hampson, F. Gertrude,	Montreal
(2) Johnson, C.	
(1) Lamb, Mary L.	
Maltby, Emma,	Montreal
Roy, Gabrielle,	Montreal
Tooke, Mabel,	Montreal
Walker, M. O. Earle,	Montreal
Watt, M. Frances.	Montreal

FOURTH YEAR.

Ames, L. M.,	Montreal
Archbald, Louisa G.,	Montreal
Brodie, A.,	Montreal
Brodie, May,	Montreal
(2) Carlyon, Cecile M.	Montreal
(2) Fulton, Alice.	
Genviles, Emma E.,	Montreal
Grier, Olive M.,	Montreal
(2) Molson, Mabel.	
(2) Munn, J. Isobel.	
(2) Murphy, M. Grace.	
(2) Porter, Sarah H.	
Reekie, I. G.,	Montreal
Reekie, J. C.	Montreal
Taylor, M. E.,	Montreal
(3) Tooke, Mabel.	
(2) Williams, Violette M.	

B. A.

Botterell, Florence A.,	Montreal
Brittain, Isabel E.,	Montreal
Brown, Justine M.,	Montreal
Denoon, Agnes H.,	Montreal
Henderson, Mary H.,	Montreal
Jackson, Annie L.,	Montreal
Locke, Winifred Augusta,	St. Lambert
Lyman, Helen W.,	Montreal
Lyman, Katherine T.,	Montreal
McCuaig, Mary,	Montreal
Mitchell, Katharine R.	Montreal
Palmer, Jane V.,	Montreal
Radford, Ethel S.,	Montreal
Raynes, Ethel G.,	Montreal
Travis, Katherine H.	Hampton, N. B
Watson, Mona T.,	Montreal
Wilson, Margaret.	Montreal

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

Allen, Samuel J. Maitland, N.S.
Angel, William H., St. John's, Nfld
Arkley, Lorne M., East Angus, Q
Barber, René R., Georgetown, O
Burwell, Ernest V., London, O
Byers, Archibald F., Gananoque, O
Callaway, F.W., Minneapolis, Minn, U.S
Cameron, William T.,
Cary, George M., Goderich, O
*Coote, Sydney R., St Albans, Vt. U.S.A
Corriveau, Raoul de B., Iberville, Q
Coussirat, Henri A., Montreal
Cowans, Frederick, Montreal
Currie, Alexander, Westmount, Q
Donaldson, Hugh W., Hamilton, O
Donnelly, Austin J., Montreal
Duncan, Gailen R., Montreal
Ewart, George R., Kilauea, Kanai, Hawaiian Islands
Fraser, John W., Charlottetown, P.E.I
Forman, Andrew S., Montreal
Fournier, Raymond C., Montreal
Gillean, Robert H., Montreal
Glassco, Jack G., Hamilton, O
*Gordon, Hamilton, Montreal
Hamilton, George M., Peterboro, O
Hamilton, James, Peterboro, O
Hatchette, Joseph C., Montreal
*Hearn, John F., St. John's, Newfl'd
Hill, Lawrence, Montreal
Howard, Lawrence O, Lachine, Q
Howard, Rupert F., Lachine, Q
*Hyndman, William E., Charlottetown P.E.I
Kane, Roderick A. C., Montreal
Lacroix, Albert, Montreal
*Macdonald, Roderick B., Glenaladale, P.E.I
Maclaren, George McG., Ottawa, O
Macmaster, Arthur W., Montreal
McDonald, William, Glace Bay, N.S
Millar, James L, Pembroke, O
Miller, Angus K., Bridgeburg, O
Molson, Kenneth, Montreal
*Moncel, René, Montreal
Montgomery, George, Morrisburg, O
*Morais, Gerald E. E., Jamaica, West Indies
Mowat, William H. M., Montreal
Nelson, George J., Montreal
Neville, Thomas P. J., Halifax, N.S
Ogilvie, Norman C, Montreal
Osborne, J. Ewart, Toronto, O
Parizeau, Henri D, Boucherville, Q
*Penhallow, Dunlap P, Montreal
Percy, Howard M., Montreal
Pyke, Gordon McT., Montreal
*Reeves, James D., Grenville, Q
*Reford, Lewis L., Montreal
Robertson, Philip W. K., Mexico City, Mexico
Rolland, Jean, St. Jerome, Q
Scott, George W., Montreal
Scott, Harry E., Napanee, O
*Sharpe, G. P., B. C.
Shepherd, Harry L., Brockville, O
Sise, Paul F., Montreal
Smith, Charles E., Ottawa, O
Smith, George B., Stratford, O
Staveley, Edward B., Quebec, Q
St. George, Harry L., Montreal
*Thivierge, René Longueuil, Q
*Toole, John L., Montreal
*Trenholme, Arthur K., Montreal
Walker, Frank W., Montreal
Watson, Robert G., Montreal
Whiteway, William V. E., St. John's, Newfoundland

SECOND YEAR.

Archibald, Ernest M., Halifax, N.S
Austin, Claude V. C., Ottawa, O
Bachand, Geo., Montreal
Blaylock, Selwyn G., Danville, Q
Bowman, Archibald A., New Glasgow, N.S
Burgess, R. Earl., Wolfville, N. S
Campbell, Norman M., Montreal
Colpitts, Walter W., Moncton, N.B
Cornwall, Clement A. K., Ashcroft, B.C
Dargavel, James S., Elgin, O
Davidson, William A., Peterboro, O
Denis, Leopold, Montreal
Ewan, Herbert M., Montreal
Fetherstonhaugh, Edward P., Montreal
Fraser, Charles E, Montreal
Fraser, Harold, Brockville, O
Fraser, James W., Bridgeville, N.S
Gagnon, Louis F., Montreal
Gough, Richard T., Halifax, N. S
Grier, Arthur G., Montreal
Henderson, Richard A., Chilliwack, B.C
Hickey, John V., Montreal
Howell, Archibald R., Montreal
Hutchinson, William S., Montreal
Hyde, George T., Montreal
Hyde, James C., Montreal
Kirkpatrick, Stafford F., Kingston, O

MacInnes, Henry W., Halifax, N,S
*McKenzie, Bertram S., London, O
McLaren, Archibald J., Montreal
McLean, William B., Pictou, N.S
McLeod, Norman M., Montreal
McMillan, George P., Petrolia, O
Moore, Wm. M., Ottawa, O
Moore, William A., Toronto, O
Morgan, Charles B., Hamilton, O
Nicholls, Henry G., Toronto, O
*Paterson, Charles S., Montreal
Payne, Henry M., Long Id., N.Y..U.S.A
Peden, Frank, Montreal
Pender, William D., Toronto, O
*Pergau, Harry, Lyn, O
Porcheron, Alphonse, Montreal
Preston John, Toronto, O
*Redpath, J. Herbert, Montreal
Shaw, John A., Montreal
Stevens, Angus P., Dunham, Q
*Van Horne, Richard B., Montreal
Waller, George W., Bartonville, O
Wenger, Edgar I., Ayton, O
Whyte, John S., Osgood, O
Wilson, Robert M., Montreal
Young, William M., Renfrew, O
Yuile, Norman M., Montreal

THIRD YEAR.

Angel, Fred, W., St. Johns, Newfl'd
Archibald, Harry P., Antigonish, N.S
Ainley, Charles M., Almonte, O
Atkinson, Donald C. T., Etchemin, Q
Atkinson, William J., Glenboro, Man
Bacon, Frederick T. H., Montreal
Beatty, David H., Sarnia, O
Benny, Walter W., D'Aillebout, Q
Bond, Frank L. C. Montreal
Butler, Percy, Montreal
Cape, Edmond, Hamilton, O
Davidson, J. Herbert, Montreal
Davis, Angus W., Montreal
Dean, Bertram D., Hamilton, O
Eaves, Edmund, Montreal
Gisborne, Lionel L., Ottawa, O
Hillary, George M., Whitby, O
Irving, Thomas T., Vernon River Bridge, P. E. I
Laurie, Albert, Montreal
McKerras, John D., Kingston, O
Mackie, James D., Kingston station, O
MacLean, Thomas A., Charlottetown, P.E.I
MacLennan, Frank W., Cornwall, O
Macphail, William M., Orwell, P.E I
Matheson, Ernest H,, Oyster Bed Bridge, P.E.I
McCarthy, George A, Moncton, N.B
McLea, Ernest H., Montreal
McRae, John B., Ottawa, O
Patton, W. H., Huntingdon, Q
Reaves, Campbell, Montreal
Scott, Arthur T., Montreal
Scott, James H., Outremont, Q
Sheffield, Charles, Kingston, O
Simpson, J. Manley, Stratford, O
Summa, Vito M., Avigliano, Italy
Thomas, Leonard E. L. Melbourne, Q
Waterous, Charles A., Brantford, O
Wilkinson, Charles T., Brockville, O
Young, George A., Kingston, O

FOURTH YEAR.

Archibald, William M., Truro, N.S
Balfour, Reginald H., Montreal
Bell, John W., Montreal
Blair, David E., Chicoutimi, Q
Bovey, Edward P., Torquay, Devon, Eng
Burnham, Harold B, Peterboro, O
Campbell, Alexander, Ottawa, O
Chamberlain William T., Halifax, N.S.
Connal, William F., Peterboro, O
Davidson, Shirley, Montreal
Dougall, Ralph, Montreal
Drinkwater, Charles G., Montreal
Drysdale, George A., Boston, Mass., U. S. A
Edward, John R., Outremont, Q
Ferguson, Thomas, Peterboro, O
Finnie, Oswald S., Ottawa, O
Haycock, Richard L., Ottawa, O
Macbean, Stanley L., Montreal
Macdonald, James E., New Glasgow, N S.
Macdonald, Peter W., West Bay, N. S
McKinnon, George D., Charlottetown, P. E. I
MacLeod, George R., Uigg, P.E.I
McKibbin, Fred. W. J,, Peterboro, O
McLaren, Duncan T., Montreal
Newcombe, Avard B, Lakeville, N. S
Ogilvie, Wm M., Cummings' Bridge, O
Packard, Frank L., Montreal
Paradis, Paul, St. Johns, Q
Pitcher, Norman C., Montreal
Ross, John K., Montreal
Sise, Charles F., Montreal
Stovel, Russell W., Toronto, O
Suter, Robert W., Carleton Place, O
Symmes, Howard C., Aylmer, Q
Thomson, Clarence, Montreal
Thomson, Henry N., Quebec, Q
Turnbull, John M., Montreal
Walters, Morley T., Hull, Q
White, Frank H., Montreal
Yorston, Louis, Pictou, N.S

GRADUATES.

Dawson, G. H., B.A.Sc., Vancouver, B.C
Denis, Theophile, B.A.Sc., Montreal
Farmer, John T., B.A.Sc., Liverpool, E
Gill, James L. W., Little York, P.E.I
Huestis, Harry E. Halifax, N.S
McDougall, W., B.A.Sc., Ormstown, Q
Reinhardt, Carl, B.A.Sc., Montreal
Rutherford, Gordon S., B.A.Sc., Montreal
Rutherford, S. F., B.A.Sc., Montreal

Partial Students.

Barclay, Alexander, Montreal
Beaubien, Joseph, Montreal
Keays, Jos. Alex., Boston, Mass., U.S.A
Leach, Francis E., Montreal
O'Brien, Edward M., Montreal
Roach, William F., Montreal

FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

FIRST YEAR.

Amyrault, O.,
Galletly, G.,
Groves, J. W.,
Hammond, E. W.,
McGregor, J.,
Owens, C.,
Kato, Y. (special) Tokyo, Japan.

SECOND YEAR.

Bell, W. L.,
Burke, R. H.,
Cleaves, A. H.,
Delano, W.,
Fahey J.,
Hart, J. B.,
Lambert, G. H.
Paquin, L. A.,
Pfersick, J. G.,
Spanton, J. P.,
Symes, J. W.,
Wallis, W. B.,
Wentzell W. B.,

THIRD YEAR.

Burns, Walter, Duluth, Minn
Connely, J. A., Troy, N.Y
Cullen, D., Swampscott, Mass
Hilliard, W. A., Minnedosa, Man
Killam, B. B., Rockville, N. S
Matthew, R. G, Sawyerville, Q
Moore, J. C., St. Chrysostome, Q
Newcomb, H. H., Greenfield, Mass
Parker, J. C. Montreal
Stevenson, G. S., South Granby, Q
Sugden, B. A., Bowdon, Cheshire, Eng
Thayer, W. L., Greenfield, Mass

COLLEGES AFFILIATED IN ARTS.

MORRIN COLLEGE, QUEBEC.

Undergraduates.

FIRST YEAR.

Fyles, Faith,	Levis, Q	Ritchie, Jessie R.,	Quebec
Hunter, Louise L.,	Quebec	Rothney, William O.,	Leeds Village, Q
Macrae, Donald N.,	Quebec		

SECOND YEAR.

Jackson, Emma,	Quebec	Reid, Andrew D.,	Quebec
Laverie, James H.,	Lauson, Q	Seifert, Frederiek W.,	Quebec
Pidgeon. E. Leslie,	New Richmond, Q	Tanner, Wm. P.,	Brompton, Falls, Q
Pocock, Charles,	Hillhurst, Q	Wheeler, James,	Runnymede, Q

THIRD YEAR.

Meiklejohn, Harriet T.,	Quebec	Stuart, James A.,	Montreal

Partial Students.

Aylwin, T.,	Gilmour, —	Poston, —
Bignell, —	Grant, J. F.,	Ramsay, Geo.,
Bonham, E.	Hamilton, —	Ray, —
Boswell, —	Harrower, A.,	Reid, L,,
Campbell, W. W.,	Holt, —	Ritchie, A. D.,
Carron, H.,	Hunter, Douglas,	Ritchie, —
Chapman, —	Hunter, Helen,	Rivers, V. B.,
Cockburn, F. J.,	Lamb, H.,	Robertson, A.,
Cook, A. H.,	Langlois, C.,	Ross, H.,
Cook, —	LaRoche, W. P.,	Simpson, —
Cook, M.,	Laurie, A.,	Spence, —
Dean, —	Lawrence, H.,	Stevenson, —
Dobbin, Joseph,	Legaré, W.,	Strathy, —
Duggan, F. M.,	Levasseur, N.,	Thompson, J.,
Duggan, —	MacLeod, E.,	Thomson, —
Etterington, —	Macpherson, —	Thomson, R.,
Foote, —	Macrae, —	Walsh, J. E.,
Frechette, —	McArthur, A. H.,	Walters, A. E.,
Gale, E.,	McGee, Annie,	Walters, Henry,
Gaudet, G. M.,	McLennan, —	Warder, —
Geggie, D.	McQuarrie, —	Webb, E. E.,
Gibson, W.,	Monahan, J.,	Webb, —
Gilmour, J.,	Pentland, C. T.,	Webster, M.,
Gilmour, —	Piddington, A. G.,	Willis, H.,

ST. FRANCIS COLLEGE, RICHMOND.

Undergraduate.

FIRST YEAR.

Ewing, George E. Melbourne, Q

Partial Students.

McMichael, Robert C., Windsor Mills, Q - Wadleigh, Wilfrid W., Kingsey, Q

STANSTEAD WESLEYAN COLLEGE.

Undergraduates.

FIRST YEAR.

Flint, Mary Frances, Stanstead | Hill, Helen Mabel, Stanstead
Flint, Roy A., Derby Line, Vermont | Hill, Oliver Wendell, Stanstead

SECOND YEAR.

Rugg, Fred S. Stanstead

SUMMARY.

Students in Law, McGill College				49
" in Medicine, "				383
" in Arts :— "				
	Men	Graduates	6	
		Undergraduates	162	
		Partial	85	394
	Women	Graduates	17	
		Undergraduates	59	
		Partial	65	
Total in Arts including Students from other Faculties, about 650				
Students in Arts, Morrin College				87
" " " St. Francis College				3
" " " Stanstead Wesleyan College				5
" " Applied Science, McGill College :—				
		Undergraduates, Partial and Graduates		223
" " Veterinary Science				32
				1176
McGill Normal School, Teachers-in-training				134
				1310
Deduct, repeated in different lists				38
Total				1272

Observatory.

Latitude, N. 45° 30′ 17″. Longitude, 4^h 54^m 18^s. 67.

Height above sea level, 187 ft.

Superintendent—C. H. McLeod, Ma.E.

Assistant—George R. McLeod, B.A.Sc.

Meteorological Observations are made every fourth hour, beginning 3^h 0^m Eastern standard time ; also at 8^h 0^m and 20^h 0^m. Independent bi-hourly temperature observations are also made. The principal instruments employed are the following :—Two standard mercurial barometers ; one Kew standard thermometer ; two Pastorelli thermometers ; one maximum thermometer ; one minimum thermometer ; one set of six self-recording thermometers, with controlling clock, battery, etc. ; two anemometers ; one wind vane (wind-mill pattern) ; one anemograph, with battery, etc. ; one sunshine recorder ; one rain-band spectroscope ; and one rain gauge.

The Anemometer and Vane are on the summit of Mount Royal, at a point about three-quarters of a mile northwest of the Observatory. They are 57 feet above the surface of the ground and 810 feet above sea level.

Soil temperatures are observed, in co-operation with the Physical Laboratory, by means of platinum thermometers at depths ranging from one inch to nine feet.

The Astronomical Equipment consists of :—The Blackman Telescope (6¼ in.) ; a photoheliograph (4½ in.) ; a 3¼ in. transit, with striding level, etc. ; a prismatic (8 c.m.) transit instrument also arranged as a zenith telescope, a 2 in. transit in the prime vertical ; two collimating telescopes ; one sidereal clock ; one meantime clock; one sidereal chronometer ; one meantime chronometer ; one chronograph ; batteries, telegraph lines and sundry minor instruments.

Observations for clock errors are made on nearly every clear night. Time exchanges are regularly made with the Toronto Observatory. Time signals are distributed throughout the city by means of the noon time-ball, continuous clock signals, and the fire alarm bells ; and to the country, through the telegraph lines.

The longitude of the Observatory was determined in 1892 by direct telegraphic connection with Greenwich and with exchange of observers and instruments. The position is believed to be the most accurately determined in America.

Courses of instruction are given in the use of the meteorological instruments, see page 29, and in astronomical work to the Fourth Year Students in the Civil Engineering Courses, see page 108.

University Gymnasium.

Medical Examiner and Instructor.—R. Tait McKenzie, B.A., M.D.

The classes, which are open to Students of all the Faculties, will meet at the University Gymnasium, at hours to suit, as far as possible, the convenience of Students, and which will be announced at the commencement of the Session.

The recent addition of some special apparatus enables the instructor to devote some attention to the application of exercise in treating special cases of weakness or deformity, which should be reported to him before the regular class work is undertaken.

The Wicksteed Silver and Bronze Medals for Physical Culture (the gift of Dr. R. J. Wicksteed) are offered for competition to Students of the graduating class and to Students who have had instruction in the Gymnasium for two sessions : the silver medal to the former, the bronze medal to the latter.

The award of these medals is made by Judges, appointed by the Corporation of the University.

Every competitor for the silver medal is required to lodge with the Judges, before the examination, a certificate of good standing in the graduating class signed by the Dean or Secretary of the Faculty to which he belongs, and the medal will not be awarded to any Student who may fail in his examination for the degree.

Classes for the Students of the Donalda Special Course for Women will be conducted by Miss Barnjum at hours found most suitable.

REGULATIONS

CONCERNING THE MANAGEMENT OF

THE COLLEGE GROUNDS AND ATHLETICS.

All matters relating to the management of the College grounds and of Out-Door Athletics and Sports are under the control of a Committee consisting of :—

One Governor.
The Principal.
One Member of the Faculty of Arts.
One Member of the Faculty of Applied Science.
One Member of the Faculty of Law.
One Member of the Faculty of Medicine.
One Member of the Faculty of Comp. Medicine.
One Graduate.
One Undergraduate, member of the Football Club.

One Undergraduate, member of the Tennis Clubs.
One Undergraduate, member of the Cricket Club.
One Undergraduate, member of the Hockey Club.
The President of the Athletic Association.

The several Members of the Committee are elected annually by their respective bodies ; and the Committee meets for organization on the first Saturday of February in each year. The Undergraduate Members of the Committee are entitled to vote only on matters relating to Athletics.

The following extracts are made from the rules and regulations of the Committee, for the guidance of Members of the University and the several Athletic Clubs and Associations which are from time to time permitted to use the grounds :

The University and McTavish Street gates shall be closed between 6 p.m. and 7 a.m. on week days and the whole day on Sunday.

The Sherbrooke Street gates shall be closed between 10 p.m. and 6 a.m.

Such persons as are entitled to use the Grounds shall be provided with tickets renewable each year.

Those entitled to tickets are the Members of the University and prominent Benefactors, and the families of Governors and Professors.

The several Clubs shall be permitted to issue special tickets (without charge), entitling the holders to admission to the Grounds for the purpose of viewing matches, or for other special occasions of public interest.

All Students desirous of taking part in football matches, or otherwise engaging in violent athletic contests, must pass a medical examination, to be held under the direction of the Superintendent of the Gymnasium. A complete record of all such examinations shall be kept by the Superintendent or other officer appointed to this duty.

All Clubs must submit their Regulations, Rules and By-Laws, and any changes in the same, for the approval of the Committee. They must make application for the use of such portions of the Grounds as they require, and for any special privileges.

The Athletic Association must submit its programme for each year for the approval of the Committee.

All Undergraduates of the University are required to pay a fee of two dollars ($2.00) for the use of the Grounds. The amount so paid is handed over to the Committee, and is by it expended in the interest of College Athletics and in the permanent improvement of the Grounds.

University Societies.

McGILL STUDENTS' CLUB.

The house No. 73 McGill College Avenue is now open as a Students' club, under the management of a Committee consisting of members of the University. Board can be obtained at the rate of $12.50 a month, or $3.00 a week. A limited number of rooms are available for residence. For further information apply to Professor D. P. Penhallow, Secretary of Committee.

UNIVERSITY LITERARY SOCIETY.

ESTABLISHED 1869.

GRADUATES' SOCIETY OF McGILL UNIVERSITY.

INCORPORATED 24TH JULY, 1880.

Officers 1897-98.

President.—Peers Davidson, M.A., B.C.L.

Vice-Presidents—Miss H. I. R. Botterell, B.A.; Miss Carrie Derick, M.A.; F. G. Finley, B.A., M.D., C.M.

Secretary.—A. R. Holden, B.A., B.A.Sc., 377 Mountain Street, Montreal.

Treasurer.—Francis Topp, B.C.L.

Resident Councillors.—Frank D. Adams, Ph.D.; H. V. Truell, B.A., B.C.L.; A. McArthur, B.A.; H. B. W. Carmichael, M.D.; H. M. Jaquays, B.A., B.A.Sc.; R. A. Gunn, B.A.Sc.

Non-Resident Councillors.—Hon. Justice Lynch, Knowlton, Que.; I. M. Powell, M.D., Victoria, B.C.; G. M. Duncan, M.D., St. John, N.B.; Robert Cassels, Q.C., Ottawa, Ont.; Rev. E. H. Kranz, LL.D., New York; E. A. Meredith, LL.D., Toronto, Ont.

APPLIED SCIENCE GRADUATES' SOCIETY.

ORGANIZED 1895.

Hon. President—Prof. Henry T. Bovey.

President—Thomas W. Lesage.

Vice-President—Asst. Prof. Richard S. Lea.

Secretary-Treasurer—Asst. Prof. C. B. Smith.

Resident Committee—E. S. M. Lovelace, Walter C. Adams, R. F. Ogilvy, S. F. Rutherford, R. H. Jamieson.

Non-Resident Committee—H. K. Wicksteed, Cobourg, Ont.; Geo. A. Walkem, Toronto; Jas. S. Costigan, Black Lake, Que.; G. S. Dobson, Kingston, N. B.; H. E. Huestis, Halifax, N.S.; W. J.

Bulman, Charlottetown, P.E.I.; D. A. Stewart, Winnipeg, Man.; R. E. Palmer, Vancouver, B.C.; C. H. McNutt, Leadville, Colorado; J. P. Ball, Lemont, Ill.; G. H. Frost, New York; R. O. King, Harvard, Cambridge, Mass.

ALUMNÆ SOCIETY OF McGILL UNIVERSITY.

President—Miss E. Binmore, M.A.
Vice-President—Miss A. Hunter, B.A.
Cor.-Secretary—Miss C. M. Derick, M.A.
Assistant Cor.-Sec—Miss E. Armstrong, B.A.
Rec. Secretary—Miss E. Tatley, B.A.
Treasurer—Miss I. Botterell, B.A.
Additional Members of Committee of Management of Girls' Club—Miss Helen R. Y. Reid, B.A.; Miss Kate Campbell, B.A.

OTTAWA VALLEY GRADUATES' SOCIETY.

ORGANIZED 1890.

Honorary President—Hon. Wilfrid Laurier, B.C.L.
President—Robert H. Conroy, B.C.L. (Aylmer).
1st Vice-President—C. J. H. Chipman, B.A., M.D., C.M.
2nd Vice-President—W. F. Ferrier, B.A.Sc., F.G.S.
3rd Vice-President—Robert A. Klock, B.A., B.C.L.
Treasurer—R. W. Ells, M.A., LL.D., (Geol. Survey office, Ottawa).
Secretary—Alfred E. Barlow, M.A. (Geol. Survey).
Committee—Wm. C. Cousens, M.D., C.M.; Howard A. Honeyman, B.A. (Aylmer); Robert A. Cassels, B.A., Q.C.; Arthur A. Cole, B.A., B.A.Sc.; S. P. Cooke, M.D., C.M.

NEW YORK GRADUATES' SOCIETY OF McGILL UNIVERSITY.

ORGANIZED 1895.

President—Rev. Edward H. Kranz, M.A., LL.D.
Vice-Presidents—Wolfred D. E. Nelson, M.D.; James A. Meek, M.D.; Wm. de Courcy Harnett, B.C.L.
Secretary—W. Ferguson, M.D., 1131 Tinton Ave., New York.
Treasurer—Hiram N. Vineberg, M.D.
Executive Committee—Rev. J. J. Rowan Spong, M.A., B.C.L., LL.B.; Geo. C. Becket, M.D.; James A. Stevenson, B.A.Sc.
Non-Resident Councillors—Right Rev. J. D. Morrison, M.A., D.D., Bishop of Duluth; Rev. Charles Bancroft, M.A., New Hampshire;

William Osler, M.D., Baltimore, Md. ; Thomas Kelly, M.D., Omaha, Neb. ; Rev. J. C. Bracq, Vassar College, N.Y. ; H. Holton Wood, B.A., Derby, Conn.

McGILL GRADUATES' SOCIETY OF TORONTO.

ORGANIZED 1896.

Hon. President—E. A. Meredith, LL.D.

President—J. J. MacLaren, Q.C., LL.D.

1st Vice-President—H. A. Burritt, M.D.

2nd Vice-President—A. R. Lewis, B.A., Q.C.

Secretary—R. B. Henderson, B.A., 24 Adelaide street East.

Treasurer—A. H. U. Colquhoun, B.A.

Executive Committee—J. Algernon Temple, M.D. ; C. Swabey, B.A. ; P. E. Ritchie, B.A. ; Rev. Canon Sweeney, D.D. ; George Pringle, M.D. ; Frank Pedley, B.A.

THE BRITISH COLUMBIAN SOCIETY OF GRADUATES OF McGILL UNIVERSITY.

ORGANIZED 1896.

Hon. President—I. W. Powell, M.D., C.M. (Victoria).

President—S. J. Tunstall, B.A., M.D., C.M. (Vancouver).

Vice-Presidents—O. Morris, M.D. (Vernon) ; W. A. Carlyle, Ma.E. (Victoria) ; D. W. Eberts, M.D. (Wellington) ; G. W. Boggs, M.D. (New Westminster).

Treasurer—W. A. DeWolf Smith, M.D., (New Westminster).

Secretary—W. J. McGuigan, M.D. (Vancouver).

Executive Committee—Arthur E. Hill, B.A.Sc. (New Westminster); R. E. McKechnie, M.D. (Nanaimo) ; A. M. Robertson, M.D. (Vancouver) ; R. E. Palmer, B.A.Sc. (Vancouver) ; J. M. McGregor, B.A.Sc. (Rossland).

McGILL GRADUATES' SOCIETY OF NEW BRUNSWICK.

ORGANIZED 1896.

President—W. W. White, M.A., M.D. (St. John, N.B.).

1st Vice-Pres.—G. W. Fleming, M.D. (Petitcodiac, N.B.).

Secretary-Treasurer—J. H. Scammell M.D. (76 Waterloo St., St. John, N.B.).

Executive Committee—T. L. Kenney, M.D. (St. John, N.B.) ; F. H. Wetmore, M.D. (Hampton, N.B.).

NOVA SCOTIA SOCIETY OF McGILL GRADUATES.

ORGANIZED 1896.

Hon. President—John McMillan, M.D. (Pictou).
President—Rev. Robt. Laing, M.A. (Halifax).
1st Vice-Pres.—A. P. Reid, M.D. (Halifax).
2nd Vice-Pres.—A. A. Mackay, B.A. (Halifax).
Secy.-Treas.—W. H. Hattie, M.D. (11 Spring Garden Road, Halifax).
Executive Committee—E. A. Kirkpatrick, M.D. (Halifax) ; E. V. Hogan, M.D. (Halifax) ; S. Bonnell, M.D. (Bridgewater).

UNDERGRADUATES' LITERARY SOCIETY.

CONSTITUTED 1880.
OFFICERS FOR 1897-8.

President—Andrew R. McMaster, B.A.
1st Vice-Pres.—W. Gordon Bishop, Arts, '98.
2nd Vice-Pres.—Reginald H. Rogers, B.A., Law, '98.
Secretary—J. Armitage Ewing, B.C.L.
Assist.-Secretary—Frank Horsfall (resigned), Arts, 1900 ; Lemuel F. Robertson, Arts, '99.
Treasurer—Arthur K. Trenholme, B.A.
Committee—Samuel G. Archibald, B.A. ; George McLeod, B.A. Sc. ; E. Edwin Howard, B.A., Law, '98 ; John C. Colby, Arts, '98 ; Lemuel F. Robertson, Arts, '99.

DELTA SIGMA SOCIETY.

ESTABLISHED 1884.
OFFICERS FOR 1897-98.

President—Muriel Carr.
Vice-President—Kathleen Finley.
Sec.-Treasurer—Helena Dey.
Committee—Misses F. Botterell, Walker and McDougall.

McGILL COLLEGE YOUNG MEN'S CHRISTIAN ASSOCIATION.

OBJECT.—To promote the piety of its members and the cause of Christianity in the University.

MEMBERS.—The active Membership of the Association shall consist of Graduates and Students of the University who are members of some Protestant church. Any Graduate and Student of good moral character may become an associate member. A social reception is given to new students at the beginning of the session.

OFFICERS FOR 1897.

Hon. President—Sir Wm. Dawson.
President—H. P. Archibald, App. Sc., '98.
1st Vice-President—R. C. Paterson, Arts, '98.
2nd Vice-President—A. H. Gordon, Med., '99.
Recording Secretary—W. B. McLean, App. Sc., '99.
Treasurer—W. S. Galbraith, Med., '98.
Asst.-Treasurer—J. G. Greig, Arts, 1900.
Representative from Law—R. H. Rogers, B.A., '98.
Representative from Comparative Medicine—Mr. Delanoe, '98.
General Secretary—A. H. Grace, Arts, '98.

CHAIRMEN OF COMMITTEES.

Religious Meeting—Prof. H. F. Armstrong.
Bible Study—A. H. Gordon, Med., '99.
Social—C. Ogilvy, B.A., Med., '98.
Membership—N. D. Keith, B.A., Theol., '98.
Missionary—H. P. Luttrell, Arts, '99.
Musical—A. G. Cameron, Arts, '99.
Finance—W. S. Galbraith, Med., '99.
Handbook—A. H. Grace, Arts, '98.
Building—H. P. Archibald, Sc., '98.
Graduate—W. F. Hamilton, M.D.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION.

ESTABLISHED 1887 (AS THEO DORA SOCIETY).

OBJECT.—The development of Christian character in the members, and the development of active Christian work, particularly among the young women of the University. Open for membership to students of the Donalda Special Course for Women.

SESSION 1897 98.

President—A. Louise Shaw.
Vice-President—Christina King.
Cor.-Secretary—Ethel Seifert.
Rec.-Secretary—Lillian Smith.
Treasurer—Helena Dey.

CONVENERS OF COMMITTEES.

Devotional—A. G. Steen.
Theo Dora—Christina King.
Membership—Anna Scrimger.
Relief—Maude Reynolds.

McGILL COLLEGE CLASSICAL CLUB.

For the purpose of fostering a greater interest in and promoting the further study of Classical Languages, Literature and Art.

OFFICERS FOR 1897 98.

Hon. President—Principal Peterson.
President—Prof. A. Judson Eaton, Ph.D. (Leipsic).
1st Vice-President—J. G. Saxe, B.A.
2nd Vice-President—T. R. Macmillan, B.A.
Secretary—M. C. Heine, Arts, '98.
Hon. Treasurer—Prof. Chas. E. Moyse, B.A. (London).
Treasurer—D. W. Munn, Arts, '98.
Executive Committee—E. E. Howard, Law, '98; C. S. Hickson, Law, '98; S. B. Slack, M.A.

McGILL UNIVERSITY ATHLETIC ASSOCIATION.

ESTABLISHED 1884.

OFFICERS FOR 1897-98.

Hon. President—Principal Peterson.
Hon. Treasurer—R. F. Ruttan, B.A., M.D.
President—W. Lynch, Med., '98.
Vice-President—J. C. Colby, Arts, '98.
Secretary—K. Molson, App. Sc., '99.
Treasurer—R. A. Shore, Med., '99.

McGILL UNIVERSITY RUGBY CLUB.

Hon. President—Principal Peterson.
Hon. Treasurer—N. D. Gunn, M.D.
President—Nathaniel Grace, Med., '98.
Vice-President—Kenneth Molson, App. Sc., '99.
Manager—Gordon Alley, Med., '98.
Hon. Secretary—Arthur K. Trenholme, B.A.
Treasurer—David A. Whitton, Med., '98.
Captain, 1st XV.—Shirley Davidson, B.A. Sc.
Captain, 2nd XV.—Archibald H. Grace, Arts, '98.
Captain, 3rd XV.—Waldo Skinner, Arts, 1900.
Committee.—Arts: H. T. Burton, J. L. Todd. App. Sc.: E. H. McLea, P. Sise. Medicine: W. H. Hill, B. W. D. Gillies. Law: J. R. Kennedy, M. Robertson. Veterinary Science: W. B. Wallis, J. P. Spanton.

McGILL UNIVERSITY CRICKET CLUB.

President—Prof. C. E. Moyse, B.A.
Vice-President.—F. W. Hibbard, B.C.L.
Secretary-Treasurer—Arthur B. Wood, B.A.
Captain—A. H. Grace, Arts, '98.
Executive Committee—A. R. Oughtred, B.C.L.; J. F. Mackie, B.C.L.; E. McLea, Sc., '98; Geo. Lyman and H. C. Hill.

McGILL LAWN TENNIS CLUB.

Hon. President—Prof. H. L. Callendar.
President—S. G. Archibald, B.A.
Vice-President—W. B. Wallis, Vet. Sc., '98.
Secretary—John G. Saxe, B.A.
Treasurer—E. A. Grafton, M.D.
Committee—F. Nicholson, Med., '98; R. C. Patterson, Arts, '98; F. Bacon, App. Sc., '99; J. Kennedy, Law, '98; J. G. Pfersick, Vet. Sc., '98; G. H. Mathewson, B.A., M.D.

McGILL UNIVERSITY GLEE AND BANJO CLUB.

OFFICERS FOR 1897-98.

Hon. President—Dr. Harrington.
President—W. F. Carter, B.A.Sc., Law, '99.
Vice-President—W. W. Colpitts, App. Sc., '99.
Secretary—R. V. Patterson, Med., '98.
Leader of Banjo Club—H. H. Hilborn, App. Sc., '98.
Leader of Mandolin Club—D. F. Wood, Med., '98.
Leader Glee Club—P. T. Moore, Arts, '98.
Asst. Leader Glee Club—M. M. Burke, Arts, '99.
Business Manager—
Asst. Business Manager—A. F. Byers, App. Sc., 1900.

BENEFACTORS OF

McGill University, Montreal.

I. GENERAL ENDOWMENTS AND SUBSCRIPTIONS.

1. ORIGINAL ENDOWMENT, 1811.

THE HONORABLE JAMES McGILL, who was born at Glasgow 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the estate of Burnside, situated near the city of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money unto the "Royal Institution for the Advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of His Majesty, King George the Third, to erect and establish a University or College, for the purpose of Education and the advancement of learning, in the Province of Lower Canada, with a competent number of Professors and teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the colleges to be comprised in the said University should be named and perpetually be known and distinguished by the appellation of "McGill College."

The value of the above mentioned property was estimated at the date of the bequest at.....$120,000

2. UNIVERSITY BUILDINGS, ETC.

THE WILLIAM MOLSON HALL, being the west wing of McGill College buildings with the connecting Corridors and Class Rooms, was erected in 1861, through the munificent donation of the founder whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880, and formally opened August, 1882.

Lots for University buildings adjoining the College grounds confronting on McTavish St., presented by J. H. R. Molson, Esq.,—$42,500.

THE PETER REDPATH LIBRARY BUILDING, the gift of Peter Redpath, Esq, announced by him as a gift to the University in 1891, and formally opened Oct. 31st, 1893.

UNIVERSITY OFFICES, Rooms in East Wing remodeled and furnished for offices of Principal and Secretary and for a Board Room by W. C. McDonald, Esq., in 1895.

3. ENDOWED CHAIRS, ETC.

THE JOHN FROTHINGHAM PRINCIPAL FUND, to be invested for the endowment of the Principalship of the University; founded in 1889 by the Rev. Frederick Frothingham and Mrs. J. H. R. Molson,—$40,000.

4. ENDOWMENTS AND DONATIONS OF MEDALS AND PRIZES.

In 1883 a Gold, Silver and Bronze Medal were given by R. J. Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture," by Students in the Graduating Class and 2nd year of any Faculty, who have attended the University Gymnasium. The Gold Medal was continued to 1889 and the Silver and Bronze have been continued to date.

Ottawa Valley Graduates' Society's Exhibition. For competition by candidates from the Ottawa Valley at the June matriculation examinations of any Faculty. Value, $50.00. Given annually since 1895.

A Prize given by the British Columbia Society of Graduates of McGill University to be divided amongst the five Faculties. Annual value $50.00. Given in 1896.

5. SUBSCRIPTIONS TO GENERAL ENDOWMENT.

1856.

John Frothingham, Esq	$2000	Forward	$19,200
John Torrance, Esq	2000	Moses E. David, Esq	600
James B. Greenshields, Esq	1200	Wm. Carter, Esq	600
William Busby Lambe, Esq	1200	Thomas Patton, Esq	600
Sir George Simpson, Knight	1000	Wm. Workman, Esq	600
Henry Thomas, Esq	1000	Hon. Luther H. Holton	600
John Redpath, Esq	1000	Henry Lyman, Esq	600
James McDougall, Esq	1000	David Torrance, Esq	600
James Torrance, Esq	1000	Edwin Atwater, Esq	600
Hon. James Ferrier	1000	Theodore Hart, Esq	600
Harrison Stephens, Esq	800	Wm. Forsyth Grant, Esq	600
Henry Chapman, Esq	600	Robert Campbell, Esq	600
Hon. Peter McGill	600	Alfred Savage, Esq	600
John James Day, Esq	600	James Ferrier, jun., Esq	600
Thomas Brown Anderson, Esq	600	William Stephen, Esq	600
Peter Redpath, Esq	600	N. S. Whitney, Esq	600
Thomas M. Taylor, Esq	600	William Dow, Esq	600
Joseph McKay, Esq	600	William Watson, Esq	600
Donald Lorn McDougall, Esq	600	Edward and Alicia Major	600
Hon. Sir John Rose	600	Hon. Sir A. T. Galt	360
Charles Alexander, Esq	600	John R. Esdaile, Esq	200
Forward	$19,200	Total	$30,560

1871.

John Frothingham, Esq	$5150	Forward	$24,350
William Molson, Esq	5000	T. W. Ritchie, Esq	300
William C. McDonald, Esq	5000	Messrs. Sinclair, Jack & Co	250
Thomas Workman, Esq	5000	John Reddy, M.D	100
J. H. R. Molson, Esq	2000	Wm. Lunn, Esq	100
John McLennan, Esq	1000	Hon. F. W. Torrance	60
B. Gibb, Esq	600	Wm. Rose, Esq	50
Messrs. A. & W. Robertson	600	Total	$25,210
Forward	$24,350		

1881-82

Hugh McLennan, Esq	$5000	Forward	$21,000
G. A. Drummond, Esq	4000	O. S. Wood, Esq	1000
Geo. Hague, Esq	3000	J. B. Greenshields, Esq (London)	1000
M. H. Gault, Esq	2000	Warden King, Esq	1000
Andrew Robertson, Esq	1000	W. P. Cumming, Esq	1000
Robertson Campbell, Esq	1000	Mrs. Hew Ramsay	500
Sir Jos. and Lady Hickson	1000	R. A. Ramsay, Esq	500
Mrs. Andrew Dow	1000	H. H. Wood, Esq	500
Alexander Murray, Esq	1000	James Burnett, Esq	500
Miss Orkney	1000	Charles Gibb, Esq	500
Hector McKenzie, Esq	1000	J. S. McLachlan, Esq	200
Forward	$21,000	Total	$27,700

1883-84.

Edward Mackay, Esq.....$5000

C. ENDOWMENT FUND FOR GENERAL PURPOSES.

1897.

Bequest of the late John H. R. Molson, Esq., $100,000.

7. SUBSCRIPTION FOR IMPROVEMENTS TO COLLEGE, 1856.

Hon Charles Dewey Day $200

8. SUBSCRIPTIONS FOR CURRENT EXPENSES, 1881-82.

Principal Dawson					$ 1,000
J. H. R. Molson, Esq	1,000	per annum,	5	years, being	5,000
George Stephen, Esq	1,000	"	"	"	5,000
Hon. Donald A. Smith	1,000	"	"	"	5,000
David Morrice, Esq	200	"	"	"	1,000
Messrs. Gault Brothers & Co	200	"	"	"	1,000
Messrs. S. H. & A. S. Ewing	200	"	"	"	1,000
Hon. Robert Mackay	300	"	2	"	600
Jonathan Hodgson, Esq	100	"	5	"	500
Geo. M. Kinghorn, Esq	100	"	5	"	500
David J. Greenshields, Esq					300
Thomas Craig, Esq	100	"	2	"	200
John Rankin, Esq					200
John Duncan, Esq					200
George Brush, Esq., $25 for five years, being					125
Robert Benny, Esq					100
Miss E. A. Ramsay					100
Hugh Paton, Esq., $50 for two years, being					100
J. M. Douglas, Esq					50
James Court, Esq					50
				Total	$22,025

1887-88.

John H. R. Molson, Esq	$1,000	per annum,	3	years, being	$3,000
W. C. McDonald, Esq	1,000	"	"	"	3,000
Peter Redpath, Esq	1,000	"	"	"	3,000
Hon. Sir D. A. Smith, K.C.M.G	1,000	"	"	"	3,000
Hon. James Ferrier	500	"	"	"	1,500
Sir Joseph Hickson	500	"	"	"	1,500
Hugh McLennan, Esq	250	"	"	"	750
E. B. Greenshields, Esq	250	"	"	"	750
George Hague, Esq	250	"	"	"	750
John Molson, Esq	250	"	"	"	750
Samuel Finley, Esq	250	"	"	"	750
Mrs. Mackay, $100 annually, 1889 to 1893					500
				Total	$19,250

9. SUBSCRIPTIONS FOR A BUILDING FOR THE CARPENTER COLLECTION OF SHELLS.

1868.

Peter Redpath, Esq.	$ 500	Forward	$1,600
William Molson, Esq.	500	Geo. H. Frothingham, Esq.	100
Harrison Stephen, Esq.	100	Wm. Dow, Esq	100
Robert J. Reekie, Esq.	100	Thos. Rimmer, Esq.	100
John H. R. Molson, Esq.	100	Andrew Robertson, Esq	100
Sir Wm. E. Logan, F.R.S.	100	Mrs. Redpath	100
John Molson, Esq.	100	Benaiah Gibb, Esq	50
Thos. Workman, Esq., M.P.	100	Honorable John Rose	50
Forward	$ 1,600	Total	$2,200

10. SUBSCRIPTIONS FOR THE ERECTION OF THE LODGE AND GATES.

William Molson, Esq.	$ 100	Forward	$1,100
John H. R. Molson, Esq.	100	John Frothingham, Esq.	100
William Workman, Esq.	100	James A. Mathewson, Esq.	100
Joseph Tiffin, jun., Esq.	100	Peter Redpath, Esq.	100
Thos. J. Claxton, Esq.	100	G. H. Frothingham, Esq.	100
James Linton, Esq.	100	G. D. Ferrier, Esq.	100
William McDougall, Esq.	100	John Smith, Esq.	100
Charles J. Brydges, Esq.	100	Charles Alexander, Esq.	100
George A. Drummond, Esq.	100	J. Evans, Esq	100
Thomas Rimmer, Esq.	100	Henry Lyman, Esq.	50
William Dow, Esq.	100	Total	$1,950
Forward	$1,100		

11. LIBRARY AND MUSEUM.

Special Collections of Books presented to the Library.

1. The Peter Redpath Collection of Historical Books, presented by Peter Redpath, Esq., of Montreal, 3,500 Volumes, with subsequent additions.
2. The Robson Collection of works in Archæology and General Literature, presented by Dr. John Robson, of Warrington, England, 3,436 Volumes.
3. The Charles Alexander Collection of Classical Works, presented by C. Alexander, Esq., of Montreal, 221 Volumes.
4. Frederick Griffin, Esq., Q.C.; Collection of Books, being the whole of his Library, bequeathed by his will, 2695 Volumes.
5. The Hon. Mr. Justice Mackay, Collection of Books, being the whole of his Library, 2007 Volumes.
6. The "T. D. King Shakespeare Collection," presented by the Hon. Sir Donald A. Smith and W. C. McDonald, Esq., of Montreal, being 214 Volumes.

Endowments for Library.

Hon. F. W. Torrance for Endowment of Mental and Moral Philosophy Book Fund (1876)	$1,000	Forward	$6,000
Mrs. Redpath, for the Endowment of the Wm. Wood Redpath Library Fund (1881)	1,000	A friend, by the Hon. F. W. Torrance, for Endowment of a Library Fund (1882)	400
Wm. Molson, Esq., for Endowment of a Library Fund (1871)	4,000	Hugh S. McLennan, Library Endowment, a gift from Estate late Hugh S. McLennan to the Library of McGill College, the income to be applied to binding (1892)	250
Forward	$6,000	Total	$6,650

Subscriptions, etc., to Library.

John Thorburn, for purchase of Books	$ 90
Andrew Drummond, do., for Applied Science	25
The Graduates in Arts and Applied Science of 1885 for purchase of Books	31
do do of 1886	28
The late R. A. Ramsay, Esq., Bequest for purchase of books (1887)	1,000
Andrew Drummond, Esq., to Library Fund of Faculty of Applied Science	25
Hon. Sir Donald A. Smith, for purchase of books from the R. W. Boodle Library	200
Forward	$1,399
Forward	$1,399
Ottawa Valley Graduates' Society, for binding books in the University Library	25
Peter Redpath, Esq., in aid of the new catalogue of the Library (1892)	500
Mrs. Peter Redpath for maintenance of Library, $5,000 per annum for 3 years (since 1894)	15,000
Hon. Sir Donald A. Smith, donation for the purchase of books for the Library, particularly in the French Department (1897)	250
John H. R. Molson, donation for purchase of books for the Library (1897)	195
Total	$17,369

Special Collections presented to the Museum.

1. The Holmes Herbarium, presented by the late Andrew F. Holmes, M.D.
2. The Carpenter Collections of Shells, presented by the late P. P. Carpenter, Ph.D.
3. The collection of Casts of Ivory Carvings issued by the Arundel Society, presented by Henry Chapman, Esq.
4. The McCulloch Collection of Birds and Mammals, collected by the late Dr. M. McCulloch of Montreal, and presented by his heirs.
5. The Logan Memorial Collections of Specimens in Geology and Natural History, presented by the heirs of the late Sir W. E. Logan, LL.D., F.R.S.
6. The Dawson Collection in Geology and Palæontology, being the Private Collections of Principal Dawson, presented by him to the Museum.
7. The Bowles Collection of Lepidoptera, presented by W. C. McDonald, Esq., and J. H. Burland, Esq.
8. R. Morton Middleton, jr., London, Eng., Collection of Plants.

(See also "List of Donations to the Library and Museum," printed in the Annual Report of the University and Report of the Museum.)

Endowment for the Museum

Wm. Molson, Esq., for the Endowment of a Museum Fund (1873)	$2,000

Subscriptions, etc., for the Museum.

T. J. Claxton, Esq., for purchase of Specimens for Museum	$ 250
Peter Redpath, Esq., for Museum expenses, $1,000 per annum from 1882 to 1893	12,000
Mrs. Peter Redpath, for Museum expenses, 1894 to 1896	4,000
Mrs. H. G. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan shells	233
Peter Redpath, Esq., for improvements to Museum (1891)	1,000
Forward	$17,483
Forward	$17,483
A Lady, for Museum Expenses from 1882 to 1894	7,000
A friend for the purchase of specimens for the Museum	4,300
John H. R. Molson, for purchase of book on "Butterflies of Eastern U.S. and Canada"	50
Hon. Sir Donald A. Smith, for mounting skin and skeleton of Musk Ox	150
Total	$28,983

12. MISCELLANEOUS.

Chas. T. Blackman, Esq., of Montreal, the gift of a Telescope and Astronomical Instruments called after his name.
J. J. Arnton bequest to McGill University (1895) ..... $ 900
R. A. Ramsay, M.A., B.C.L., to defray the expenses of re-erecting the tomb of the late Hon. James McGill (1877) 150

13. UNIVERSITY PORTRAITS AND BUSTS.

Portrait of the Founder, presented by the late Thomas Blackwood, Esq.
Portrait of William Molson, Esq., presented to the University.
Bust of William Molson, Esq., by Marshall Wood, presented by Graduates of the University.
Portrait of Peter Redpath, Esq., painted by Sydney Hodges, presented by Citizens of Montreal.
Portrait of Rev. Dr. Leach, by Wyatt Eaton, presented by Friends and Graduates of the University.
Portrait of Sir William Dawson, by Wyatt Eaton, presented by Friends and Graduates of the University.
Portrait of Hon. James Ferrier, by Robert Harris, presented by Friends and Graduates of the University.
Portrait of Dr. William Robertson, founder of the Medical Faculty, presented in loving remembrance by his family and descendants.
Bust of Peter Redpath, Esq., by Reynolds Stephens, presented by Mr. Redpath's personal friends in England.
Portrait of Peter Redpath, Esq., by Robert Harris, presented by Friends and Undergraduates of the University.

II ENDOWMENTS AND SUBSCRIPTIONS FOR THE FACULTY OF ARTS.

1. BUILDINGS, CHAIRS, ETC.

Endowment Fund, 1856.

John Gordon McKenzie, Esq.,	$2,000
Ira Gould, Esq.	2,300
Total,	$4,300

The Molson Chair of English Language and Literature, in 1856, endowed by the Honorable John Molson, Thomas Molson, Esq., and William Molson, Esq., —$20,000; and supplemented in 1892 by John H. R. Molson, Esq., with a further sum of $20,000. Total $40,000.

The Peter Redpath Chair of Pure Mathematics (founded as Chair of Natural Philosophy), in 1871, endowed by Peter Redpath, Esq.,—$20,000.

The Logan Chair of Geology, in 1871, endowed by Sir W. E. Logan, LL.D., F.R.S., and Hart Logan, Esq.,—$20,000.

The John Frothingham Chair of Mental and Moral Philosophy, in 1873, endowed by Miss Louisa Frothingham,—$20,000, and supplemented in 1891 with a further sum of $20,000. Total $40,000.

The Major Hiram Mills Chair of Classics, in 1882, endowed by the last will of the late Major Hiram Mills of Montreal,– $42,000.

The David J. Greenshields Chair of Chemistry and Mineralogy in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal, with the sum of $40,000, half of which is devoted to the Faculty of Arts.

The William C. McDonald Chairs of Physics, in the Faculties of Arts and Applied Science, endowed by William C. McDonald, Esq., in 1890,—$50,000; in 1893,—$50,000. Total $100,000.

THE CHARLES GIBB BOTANICAL ENDOWMENT, received by subscriptions.
A Friend,— $8,000.
Mrs. Catherine Hill,—$200. Total $8,200.

THE WILLIAM C. MCDONALD Physics Building and Equipment, in the Faculties of Arts and Applied Science. The gift of William C. McDonald, Esq., announced by him as a gift to the University in 1890, and formally opened February, 1893.

THE W. C. MCDONALD PHYSICS BUILDING Maintenance Fund in the Faculties of Arts and Applied Science, endowed by W. C. McDonald, Esq.,—$150,000.

2. ENDOWMENT FOR PENSION FUND.

This endowment was given in 1894 to be invested and the revenue used exclusively for providing Pensions or Retiring Allowances for members of the teaching staff of the Faculties of Arts and Applied Science.

Hon. Sir Donald A. Smith,	$50,000
John H. R. Molson, Esq.,	50,000
William C. McDonald, Esq.,	50,000
Total,	$150,000

3. EXHIBITIONS AND SCHOLARSHIPS, ETC.

THE JANE REDPATH EXHIBITION, in the Faculty of Arts,—founded in 1868 by Mrs. Redpath, of Terrace Bank, Montreal, and endowed with the sum of $1,667.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, 10 in number, in the Faculty of Arts—founded in 1871, and endowed in 1882 with the sum of $25,000 by William C. McDonald, Esq.

THE CHARLES ALEXANDER SCHOLARSHIP, for Classics—founded in 1871 by Charles Alexander, Esq. Endowed in 1893 with the sum of $2,000.

THE BARBARA SCOTT SCHOLARSHIP FOR CLASSICAL LANGUAGE AND LITERATURE—founded in 1884 by the last will of the late Miss Barbara Scott of Montreal, in the sum of $2 000.

THE GEORGE HAGUE EXHIBITION—founded in 1881—Annual value $125.

THE MAJOR HIRAM MILLS MEDAL AND SCHOLARSHIP—founded by the will of the late Major Hiram Mills of Montreal, and endowed with the sum of $1,500.

T. M. THOMPSON, Esq.,—$250 for two Exhibitions in September, 1871; $200 for two Exhibitions in 1872,—$450.

REV COLIN C. STUART—for the "Stuart Prize in Hebrew,"—$60.

THE TAYLOR SCHOLARSHIP—founded in 1871, by T. M. Taylor, Esq.—Annual value $100—terminated in 1878.

PROFESSOR ALEXANDER JOHNSON—for Scholarship for 3 Sessions, terminated 1886-87,—$350.

HER MAJESTY'S COMMISSION for the Exhibition of 1851—Nomination Scholarships for 1891, 1893, 1895 and 1897, value £150 annually, tenable for two years.

THE PHILIP CARPENTER FELLOWSHIP—founded by Mrs. Philip Carpenter, for the Maintenance of a Post-Graduation Teaching Fellowship or Scholarship in Natural Science or some branch thereof in the Faculty of Arts in McGill College, endowed in 1892 with the sum of $7,000.

A Lady, to provide four free tuitions in the Faculty of Arts for sessions 1892-93 and 1893-94.

THE NEW YORK GRADUATES SOCIETY EXHIBITION—a gift of $60 in 1897, for an Exhibition in the Faculty of Arts, to be associated with the name of Sir William Dawson.

4. ENDOWMENTS AND DONATIONS OF MEDALS AND PRIZES.

In 1856 Henry Chapman, Esq. founded a gold medal, to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This medal was endowed by Mr. Chapman in 1874 with the sum of $700.

In 1860 the sum of £200, presented to the College by H. R. H. the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.

In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physics.

In the same year the "Shakespeare Gold Medal," for an Honour Course, to comprise and include the works of Shakespeare and the Literature of England from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint, was founded and endowed by citizens of Montreal, on occasion of the three hundredth anniversary of the birth of Shakespeare.

In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Logan, LL.D., F.R.S., F.G.S., etc.

In 1874 a Gold and a Silver Medal were given by His Excellency the Earl of Dufferin, Governor-General of Canada, for competition in the Faculty of Arts, and continued till 1878.

In 1875 the "Neil Stuart prize in Hebrew" was endowed by Neil Stuart, Esq., of Vankleek Hill, in the sum of $340.

In 1880 a Gold and a Silver Medal were given by His Excellency the Marquis of Lorne, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science, continued till 1888.

In 1888 a Gold and a Silver Medal were given by His Excellency Lord Stanley, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

The "Charles G. Coster Memorial Prize" for general proficiency—given annually by Colin H. Livingstone, Esq., B.A.; founded in 1889.

In 1894 a Gold and a Silver Medal were given by His Excellency the Earl of Aberdeen, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

5. SUBSCRIPTIONS FOR THE SUPPORT OF THE CHAIR OF BOTANY, 1883-84.

Principal Dawson	$500	per annum,	for 5 years,	being	$2500
Hon. Sir D. A. Smith	250	"	"	"	1250
J. H. R. Molson, Esq	100	"	"	"	500
Mrs. J. H. R. Molson	100	"	"	"	500
G. Hague, Esq	100	"	"	"	500
Mrs. Redpath	100	"	"	"	500
Hugh McKay, Esq	100	"	"	"	500
Robert Moat, Esq	100	"	"	"	500
W. C. McDonald, Esq	100	"	"	"	500
Charles Gibb, Esq	50	"	"	"	250
Miss Orkney	50	"	"	"	250
Robert McKay, Esq	50	"	"	"	250
Mr. Molson	50	"	"	"	250
Mrs. John Molson	50	"	"	"	250
John Stirling, Esq	50	"	"	"	250
Warden King, Esq	50	"	"	"	250
Miss Hall	50	"	"	"	250
Robert Angus, Esq	50	"	"	"	250
D. A. P. Watt, Esq	50	"	"	"	250
Hugh McLennan, Esq	25	"	"	"	125
Sir Joseph Hickson	10	"	"	"	50
Mrs. Phillips					10
					$9,935

6. BOTANIC GARDEN, ETC.

Subscriptions, 1890-91.

Hugh McLennan, Esq	$100	Forward	$ 900
Gilman Cheney, Esq	100	Jonathan Hodgson, Esq	100
James Johnston, Esq	100	Robert Mackay, Esq	100
James Slessor, Esq	100	H. Shorey, Esq	50
A friend	100	J. S. Shearer, Esq	50
Hugh Graham, Esq	100	Geo. Sumner, Esq	25
A. F. Gault, Esq	100	A. Ramsay & Co	25
W. T. Costigan, Esq	100	Garth & Co	25
Jonathan Brown, Esq	100		
Forward	$900	Total	$1,275

To Erect Plant House in Botanic Garden.

Hon. Sir Donald A. Smith	$362 00
John H. R. Molson, Esq	361 51
William C. McDonald, Esq	361 02
Total	$1,084 53

7. SUBSCRIPTIONS IN AID OF THE CHAIR OF HEBREW.

Warden King, Esq	in 1889	$50 per annum, 3 years, being...	$150
Principal Sir William Dawson	"	50 " " " ...	150
Hon. Hugh Mackay	"	50 " " " ...	150
A. F. Gault, Esq	"	25 " " " ...	75
Geo. Hague, Esq	"	25 " " " ...	75
T. A. Dawes, Esq	"	25 " " " ...	75
S. Carsley, Esq	"	25 " " " ...	75
S. Davis, Esq	in 1892		20
Warden King, Esq	"	50 per annum for 3 years	150
A. F. Gault, Esq	"	50 " " "	150
Robert Mackay, Esq	"	50 " " "	150
Hugh McLennan, Esq	"	25 " " "	75
George Hague, Esq	"	25 " " "	75
T. A. Dawes Esq	"	25 " " "	75
S. Carsley, Esq	"		25
J. Murphy, Esq	"		25
Total			$1,495

8. SUBSCRIPTIONS TO PROVIDE SESSIONAL LECTURERS, ETC.

Hon. Sir Donald A. Smith,	1891-92	$3500
do	1892-93	4000
do	1893-94	4000
do	1894-95	4000
do	1895-96	4000
do	1896-97	4000
Mrs. John H. R. Molson,	1891-92	300
do	1892-93	1000
do	1893-94	1000
do	1894-95	1000
do	1895-96	1000
do	1896-97	1000
W. C. McDonald, Esq., to provide for certain salaries in the Department of Physics, etc., sessions 1894-95 and 1895-96		2627
Total		$31,427

9. ENDOWMENTS FOR APPARATUS.

The Local Committee of the British Association for the Advancement of Science, to found the British Association Apparatus Fund in the Faculties of Arts and Applied Science, in commemoration of the meeting of the Association in Montreal in 1884 ..... $1,500

10. SUBSCRIPTIONS, ETC., FOR APPARATUS.

Philosophical Apparatus, 1867.

William Molson, Esq	$500
John H. R. Molson, Esq	500
Peter Redpath, Esq	500
George Moffatt, Esq	250
Andrew Robertson, Esq	100
John Frothingham	100
David Torrance, Esq	100
Thos. J. Barron, B.A	50
Forward	$2,100

Forward	$2,100
J. H. R. Molson, Esq., Dynamo, Gas Engine and fixtures	1,792
Mrs. Redpath, Storage battery	400
W. C. McDonald, Esq., fittings of Upper Chemical Laboratory	2,075
A. J. Lawson, a Dynamo.	
Benjamin Dawson, 3 Microscopes.	
Total	$6,367

11. MISCELLANEOUS.

Hugh McLennan, Esq., subscription towards expense of table at the Biological Station, Wood's Holl, Mass., for McGill Professor of Botany (1896) $250

III. SPECIAL COURSE FOR WOMEN IN THE FACULTY OF ARTS.

1. THE DONALDA ENDOWMENT FOR THE HIGHER EDUCATION OF WOMEN.

This endowment, given by the Honorable Sir Donald A. Smith of Montreal, is to provide for the education of women in the subjects of the Faculty of Arts, up to the standard of the examination for B.A., in classes wholly separate, to constitute a separate Special Course or College for women, in 1884, $50,000 and in 1886—$70,000 ..... Total... $120,000

2. FOR MUSICAL INSTRUCTION.

Hon. Sir Donald A. Smith, sessions 1889-90, $200; 1890-91, $200. Total, $400

3. FOR APPARATUS, ETC.

Sir Donald A. Smith, for appliances in Zoology in the special interest of Donalda Classes $100

4. ENDOWMENT HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Hannah Willard Lyman Memorial Fund," contributed by subscriptions of former pupils of Miss Lyman, and invested as a permanent endowment to furnish annually a Scholarship or Prizes in a "College for Women" affiliated to the University, or in classes for the Higher Education of Women, approved by the University. The amount of the fund is at present $1,100.

IV. ENDOWMENTS AND SUBSCRIPTIONS FOR THE FACULTY OF APPLIED SCIENCE.

1. BUILDINGS, CHAIRS, ETC.

THE WILLIAM SCOTT CHAIR OF CIVIL ENGINEERING, in 1884, endowed by the last will of the late Miss Barbara Scott, of Montreal,—$30,000.

THE DAVID J. GREENSHIELDS CHAIR OF CHEMISTRY AND MINERALOGY, in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal, with the sum of $40,000, half of which is devoted to the Faculty of Applied Science.

THE THOMAS WORKMAN DEPARTMENT OF MECHANICAL ENGINEERING—founded in 1891 under the last will of the late Thomas Workman, Esq., who bequeathed the sum of $117,000,—$60,000 for the maintenance of Chair of Mechanical Engineering, with the assistance, shops, machinery and apparatus necessary thereto, $57,000 to be expended in provision of necessary buildings, machinery and apparatus.

WILLIAM C. MCDONALD, ESQ., in 1890, toward erection of Thomas Workman Workshops, $20,000.

THE WILLIAM C. MCDONALD ENGINEERING BUILDING, and Equipment of same—announced by the donor as a gift to the University in 1890, and formally opened February, 1893.

THE WILLIAM C. MCDONALD PHYSICS BUILDING, and equipment of same in the Faculties of Arts and Applied Science, the gift of William C. McDonald, Esq., announced by him as a gift to the University in 1890, and formally opened February, 1893.

THE WILLIAM C. MCDONALD CHAIRS OF PHYSICS, in the Faculties of Arts and Applied Science, endowed by William C. McDonald, Esq., in 1890—$50,000; in 1893, $50,000. Total $100,000.

THE WILLIAM C. MCDONALD CHAIR OF ELECTRICAL ENGINEERING, endowed by Wm. C. McDonald, Esq., in 1891, with the sum of $40,000.

THE MCDONALD ENGINEERING BUILDING MAINTENANCE FUND, endowed by W. C. McDonald, Esq., in 1892 and 1896.—$85,000.

THE W. C. MCDONALD PHYSICS BUILDING MAINTENANCE FUND in the Faculties of Arts and Applied Science, endowed by W. C. McDonald, Esq.—$150,000.

THE MCDONALD CHEMISTRY AND MINING BUILDING, and Equipment, given to the University by William C. McDonald, Esq., in 18 6.—$240,000.

MCDONALD CHEMISTRY AND MINING BUILDING MAINTENANCE FUND, endowed by William C. McDonald, Esq., in 1896.—$135,000.

THE WILLIAM C. MCDONALD CHAIR OF MINING AND METALLURGY, endowed in 1896 by William C. McDonald, Esq., with the sum of $50,000.

THE WILLIAM C. MCDONALD CHAIR OF ARCHITECTURE, endowed in 1896 by William C. McDonald, Esq., with the sum of $50,000.

2. ENDOWMENT FOR PENSION FUND.

This endowment was given in 1894 to be invested and the revenue used exclusively for providing Pensions or Retiring Allowances for members of the teaching staff of the Faculties of Arts and Applied Science:

Hon. Sir Donald A. Smith,	$50,000
John H. R. Molson, Esq.,	50,000
Wm. C. McDonald, Esq.,	50,000
Total.....	$150,000

3. EXHIBITIONS AND SCHOLARSHIPS.

THE SCOTT EXHIBITION—founded by the Caledonian Society of Montreal, in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of $1,100 subscribed by members of the Society and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science—Annual value $60.

The Burland Scholarship, founded 1882 by J. H. Burland, B.A.Sc., $100 for a Scholarship in Applied Science, for three years, being $300.

Her Majesty's Commission for the Exhibition of 1851—Nomination Scholarships for 1891, 1893, 1895 and 1897, value £150 annually, each tenable for two years.

The Dr. T. Sterry Hunt Scholarship—founded in 1894 by the will of the late Dr. T. Sterry Hunt, and endowed with the sum of $2,755, the income to be given and paid annually to a student or students of Chemistry.

4. MEDALS AND PRIZES.

In 1880 a Gold and a Silver Medal were given by His Excellency the Marquis of Lorne, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science, continued till 1888.

In 1885 the British Association Gold Medal, for competition in the Graduating class in the Faculty of Applied Science, was founded by subscription of members of the British Association for the Advancement of Science, and by gift of the Council of the Association, in commemoration of its meeting in Montreal in the year 1884.

In 1888 a Gold and Silver Medal were given by His Excellency Lord Stanley, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

In 1894 a Gold and Silver Medal were given by His Excellency The Earl of Aberdeen, Governor-General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

5. ENDOWMENTS AND SUBSCRIPTIONS FOR MAINTENANCE OF FACULTY.

Endowment Fund.

Daniel Torrance, Esq.	$5000
Charles J. Brydges, Esq.	1000
R. J. Reekie, Esq.	100
Total	$6100

Graduates' Endowment Fund.

Graduates' Endowment Fund—Class 1890, $70 a year for 5 years, $350; received to date	$ 85

Annual Subscriptions, 1871-1879.

Hon. James Ferrier ($100 per annum for 10 years)	$1000
Peter Redpath, Esq. ($400 per annum for 10 years)	4000
John H. R. Molson, Esq. ($400 per annum for 10 years)	4000
George H. Frothingham, Esq. ($400 per annum for 7 years)	2800
T. Jas. Claxton, Esq. ($100 per annum for 6 years)	600
Donald Ross, Esq. ($50 per annum for 5 years)	250
Miss Mary Frothingham ($400 per annum for 3 years)	1200
Forward	$13,850

Forward	$13,850
H. McLennan, Esq. ($100 per annum for 5 years)	500
A. F. Gault, Esq. ($100 per annum for 5 years)	500
Gilbert Scott, Esq. ($100 for 2 years)	200
Joseph Hickson, Esq. ($100 for 2 years)	200
Principal Dawson ($300 for 2 years	600
His Excellency the Marquis of Lorne	500
Mrs. Redpath (Terrace Bank)	100
Total	$16,450

Subscriptions towards Maintenance of Engineering Department.

W. C. McDonald, Esq., in 1891		$10,000
do	for advertising	675
do	to meet deficiency, session 1893-4	10,000
do	to cover certain salaries, session 1894-95	1,770
do	to meet deficiency, session 1894-95	10,000
do	to meet deficiency, session 1895-96	8,841
do	to meet deficiency, session 1896-7	10,000
	Total	$51,286

Subscriptions to provide lectures in Mechanical and Sanitary Engineering.

E. B. Greenshields, Esq	$50	Forward	$161
J. E. Bovey, Esq	50	Jeffrey H. Burland, B.A Sc., $100 for 2 years	200
Professor H. T. Bovey	61	Smaller amounts	40
Forward	$161	Total	$401

Subscriptions for Maintenance of Chair of Practical Chemistry, 1862.

Hon. C. Dunkin, M.P	$1200
Principal Dawson	1200
P. Redpath, Esq	226
Total	$2,626

For Maintenance of Chair of Mining Engineering and Metallurgy, 1891.

R. B. Angus, Esq	$2000		Forward	$4000	$6200
Mrs. Dow	1000		E. K. Greene, Esq	750	
Hugh McLennan, Esq	1000		Dr T. Brainerd	750	
Miss Benny	1000		A. F. Gault, Esq	750	
T. A. Dawes, Esq	750		Messrs. H. & A. Allan	750	
A. A. Ayer, Esq	250		Hector Mackenzie, Esq	750	
G. W. Reid, Esq	100		Peter Lyall, Esq	750	
Evans Bros	100		James Ross, Esq	600	
	$6200		A. Robertson, Esq	300	
Payable in Three Years.			John Duncan, Esq	300	
			Geo. Hague, Esq	300	
Sir Wm. Dawson	1000		Jonathan Hodgson, Esq	300	
Alex. Stewart, Esq. (London, Eng.)	1500		James Moore, Esq	200	
R. G. Reid, Esq	1500		Messrs. Ames & Holden	150	
			James Cooper, Esq	150	
Forward	$4000	$6200			10,800
			Total		$17,000

Class Rooms for Faculty of Applied Science, 1888.

John H. R. Molson, Esq	$3000	Total	$6000
W. C. McDonald, Esq	$3000		

6. ENDOWMENTS FOR APPARATUS.

The Local Committee of the British Association for the Advancement of Science, to found the British Association Apparatus Fund in the Faculties of Arts and Applied Science, in commemoration of the meeting of the Association in Montreal in 1884 $1500

7. SUBSCRIPTIONS, ETC., FOR APPARATUS.

A lady, for the purchase of Mining Models	$1000
Thos. McDougall, Esq., for the same	25
J. Livesey, Esq., through Dr. Harrington, for the same	50
Geo. Stephen, Esq., for the same	50
Chas. Gibb, B.A., donation for Apparatus in Applied Science	50
The Local Committee for the reception (1881) of American Society of Civil Engineers	
Forward	$1175
Forward	$1175
for the purchase of appliances for the department of Civil Engineering in Faculty of Applied Science	475
Capt. Adams, Chemical Apparatus	10
J. H. Burland, B.A.Sc., Chemical Apparatus	25
W. C. McDonald, Esq., for Surveying and Geodetic Apparatus in 1890	1500
Total	$3,185

8. LIST OF SUBSCRIBERS AND DONORS TO THE EQUIPMENT OF THE NEW ENGINEERING BUILDINGS OF McGILL UNIVERSITY, TO MAY, 1897.

Abbott, W.....Equipment
American Rail Joint Co. (Cleveland, Ohio).....Specimens of Rail Joint
American Steam Gauge Co., (Boston) Indicator.
Archbald, H..... Books
Ashton Valve Co. (Boston) Sectional Valve
Bertram & Sons, J. (Dundas). 24in. Planer
Birch & Co. J. (England)..... Hydraulic Tubes
Birks, Henry.....Clock
Bishop, George ..... Equipment
Blackwell, Kennet .....Equipment
Blake Mnfg. Co., The Geo. F..... Blue Prints of Pump
Blake Pump Co., The Geo. (New York & Boston).....Pump
Bovey, Prof H. T.....Books
Bremner, A..... $50
British Columbian Mills, Timber and Trading Company, Timber Beams of large Scantling for Testing Laboratory
Brockhaus, Herr F. A.....Books
Brodie & Harvey..... $50
Brush, G.....Boiler
Cameron, General.. .....Rotary Drill
Campbell Tile Co. (England), per Jordan & Locker. .....Equipment
Campbell, Kenneth..... $50
Canadian General Electric Co..... (Toronto), per F. Nichols. Equipment
Canadian General Electric Co..... Electric Drill, Edison Generator Edison Street Railway Motor
Canadian Government ..... Collection of Canadian Timber
Canadian Pacific Railway Co.,..... Timber for Testing, Timber Beams of large Scantling for Testing Laboratory, Photographs
Canadian Rubber Co., Rubber Belting
Carsley, S..... $100
Carus-Wilson, Prof. C. A....Equipment
Cary, A. A.....Photographs of Boilers
Chadwick, F..... .....Truss Models
Chanteloup, E $50
Claxton, T. J...Timber Beams of large Scantling for Testing Laboratory
Costigan, J.....Equipment
Cowper, P. H..... Model of Steam Engine
Crocker-Wheeler Electric Motor Co., The (New York).....Motor
Crosby Steam Gauge and Valve Co., (Boston)..... Gauge and Valve, Indicator and Valves
Darling, Brown & Sharpe (Providence, R. I.) .....6 in. Rule
Date, John..... .....Equipment
Dawson, W. B ..... Iron Rail showing effect of long immersion in water
Dominion Wire Manfg Co., per F. Fairman.. .....Shaper
Drysdale, D ....Tools
Drysdale, W..... .....Tools
Earle, S. R ....Air Injector
Edison General Electric Co., Two 450 light dynamos, Brake Shoe and Disc.
Egleston, Dr. (New York).....Framed Photograph of the Moon, Books, Photos, etc.
Electric Welding Company, (Boston) Equipment
Eureka Tempered Copper Co..... Equipment

Ewan, A..... $100
Felton & Gilleaume..... Samples of Cable Wire, etc.
Forsyth, R .....Equipment
Frothingham & Workman..... Tools
Furlong, G. W., B.A.Sc ..... Specimens of Pine and Wood bored by Teredos
Gardner & Son, R. W.....16 in. Lathe
Gardner, R.....Equipment
Garth & Co..... $500
Garth Henry.....Equipment
Government of New South Wales..... Collection of Australian Timbers
Government of Queensland, Australia, Collection of Queensland Timbers
Gower, W. E.....
Graham H..... $100
Grier, G. A.....Equipment
Gurney & Co., E. & C..... $604
Hadfield, Messrs. (Sheffield).Equipment
Hamilton Powder Co.....Electrical Blasting Machine, and appliances, etc., for blasting.
Hearn & Harrison, per L. Harrison, Barometer & Clock
Hersey, R..... $1200
Hodgson, Jonathan $200
Holden, A.....Equipment
Hughes & Stephenson.....Equipment
Hutton, W. H.....Equipment
Irwin & Hopper.....Equipment
Ives, H. R.....Cupola
Joyce, Alfred..... $50
Jordan & Locker.....Equipment
Kennedy, John.....Equipment
Timber Beams of large Scantling for Testing Laboratory
Kennedy, W. & Sons..American Turbine
Kennedy, W. (Owen Sound)...Pump
Kerr, R. & W.....Tools
King & Son, Warden..... $534
Laughlin-Hough Drawing Table Co., Drawing Tables
Laurie & Bro. J.....Compound Engine
Lawson, A. J.....Equipment
Lindsay & Co., C. F.....Equipment
Lovell & Son, John.....Books
Lyster, A. G.....Drawings and Sketches of London and Liverpool Docks
Macpherson, A.....Tools
Mason, Dr.....Equipment
Maxwell & Co., E. J.....Equipment
McCarthy, D. & J. (Sorel)..... $300
McDonald, W. C .....Experimental Pump, Ewing's Hysteresis Testing Apparatus, Piano, Centrifugal Pump, Experimental Boiler, Equipment
McDougall, Mrs. J..... $4000
McLachlin Bros. (Arnprior)..... Timber for Testing
McLaren, D $100
McLaughlin Bros.....Timber Beams of large Scantling for Testing Laboratory
McNally & Co., W..... $100
McPherson Sand Box Co. (Troy, N.Y.) Model of Sand Box
Miller Bros. & Sons.....Elevator
Mitchell, P.....Equipment ($300)
Mitchell & Co., R.....Equipment
Naismith, P. L., B.A.Sc.....Specimens of Cast-Iron showing effect of mine water
Nalder Bros. & Co. (England)..... Standard Cell
National Electric Mfg. Co..... 100 volt. Transformer, Transformers
Nicholson, Peter..... $100
Norton Emery Wheel Co. (Worcester, U. S).....Equipment
Notman, Wm.....Photographs
Ogilvie, W..... $500
Palmer, A.....Equipment
Parker, M.....Equipment
Paton, H .....Equipment
Peckham Motor Truck and Wheel Co. (Kingston, N.Y) ..... Model of Motor Truck
Pelton Water Wheel Co. (New York) Two Motors
Pennsylvania Railroad Co.....Working Drawings of Locomotives (32)
Phelps Engine Co., per A. R. Williams & Co.....4 Horse Power Engine
Pillow, J. A..... $250
Pratt & Whitney (Hartford, Conn)..... Epicycloidal Gear Model
Prowse, G. R.....Equipment
Queensland Government per Sir Thomas McIlwraith ..... Collection of Timbers
Radiator Co. (Toronto)..... $500
Ramsay & Son, A..... $100
Rathbun, E. W..... $112
Reddaway & Co., F....Belt (value $50)
Redpath, F. R.....Equipment
Redpath, Mrs..... $100
Reed, G. W..... $100
Reford, R..... $1000
Reid, R.....Equipment
Reid, R. G..... $1000
Renouf, E. M .....Books
Rhode Island Locomotive Works..... Photos of Locomotives
Rife's Hydraulic Engine Mfg. Co. (Roanoke, Va., U. S. A)..... Hydraulic Ram
Robb & Armstrong..... 80 H. P. High Speed Engine

Robertson, J.....Equipment
Rogers, Professor (Waterville, Maine) Equipment
Ross, James $500
Rodden, W. .....Equipment
Royal Electric Co..... .....
12 Arc Light Dynamos
Rutherford, W .....Equipment
Sadler, G. (Robin & Sadler)..... .....
Belting ($400)
Seeley, John.....Insulators
Schaeffer & Budenbery (Brooklyn, N.Y.) Double Indicator
Scholes, F..... $100
Scovill Mfg. Co .....Equipment
Sharp, Stewart & Co. (Manchester, Eng) .. ..Equipment
Shearer, James.. .... $200
Sheppard, Chas..... ..... $200
Siemens Bros. (London, Eng) .....
Cable Samples
Smith, C. B..... .....
Framed Photos of Bridges (2)
Smith, R.. .....Equipment
Spence, J. P., C. E.....Specifications and Drawings showing construction of Sault Ste. Marie Canal Locks
Smith, R. Guilford..... .....Books
Steel Co. of Scotland, The.....
Samples of Cable Wire, etc
St. George, P. W.....Models
Stirling Co., The..... .....
Sectional Blue Prints of Boilers
Sturtevant Co., The B. F. (Boston).....
Blowers
Swan Lamp Mfg. Co .....Lamps
Taylor, A. T..... ..... $300
Tees & Co..... .....Equipment
Thomson-Houston Co. (Boston).....
Incandescent dynamos
Twyford & Co..... .....Equipment
Vail, Stephen.....Piece of first Telegraph Wire Used
Walker & Co., James ....Tools
Wanklyn, F. L.....Equipment
Ward, Hon. J. K..... $50
Warrington Wire Co.....Cable Samples
Whittier Machine Co. (Boston).....
Electric Elevator
Wiley & Sons, John (New York).Books
Yale & Towne Mfg. Co. (Stamford, Conn) ....Equipment
Yates & Thom ....
Blue Prints of Machinery

The above representing a total of about $80,000.

9. FACULTY OF APPLIED SCIENCE LIBRARY ENDOWMENT, 1893.

Hugh Paton.....$	25	Forward.....$	600
A. Joyce	25	W. Rodden	25
R. Gardner	50	M Parker.....	25
H. Garth.....	100	Robin & Sadler.....	50
Hughes & Stephenson	100	J. Robertson, Esq	50
R. Mitchell.....	300	Mrs. John McDougall (1895)	20
Forward ..... $	600	Total..... $	770

V. ENDOWMENTS AND SUBSCRIPTIONS IN AID OF THE FACULTY OF MEDICINE.

1. LEANCHOIL ENDOWMENT, 1884.

Hon. Sir Donald A. Smith, G.C.M.G..... .....$50,000

2. CAMPBELL MEMORIAL ENDOWMENT, 1884.

Established to commemorate the service rendered to the Faculty during 40 years by the late Dean, George W. Campbell, M.D., LL.D.

Mrs. G. W. Campbell.....$	2000	Forward.....$	8,000
H. A. Allan, Esq.....	1500	Alex. Murray, Esq.....	1000
Hon. Sir D. A. Smith.....	1500	Robert Moat, Esq	1000
Sir George Stephen, Bart.....	1000	W. C. McDonald, Esq	1000
R. B. Angus, Esq.....	1000	A Friend	1000
George A. Drummond, Esq	1000	Duncan McIntyre, Esq.....	1000
Forward.....$	8,000	Forward.....$	13,000

Forward	$13,000
A. F. Gault, Esq	1000
M. H. Gault, Esq	1000
G. W. Stephens, Esq	1000
James Benning, Esq	1000
R. P. Howard, M.D	1000
G. B. & J. H. Burland, Esqs	1000
Miss Elizabeth C. Benny	1000
J. C. Wilson, Esq	1000
Mrs. John Redpath	1000
Hon. John Hamilton	1000
Miss Orkney	1000
Hugh Mackay, Esq	1000
Hector Mackenzie, Esq	1000
Thomas Workman, Esq	1000
Hugh McLennan, Esq	1000
O. S. Wood, Esq	1000
Frank Buller, M.D	500
James Burnett, Esq	500
Andrew Robertson, Esq	500
Robert Mackay, Esq	500
John Hope, Esq	500
Alex. Urquhart, Esq	500
R. A. Smith, Esq	500
George Hague, Esq	500
J. K. Ward, Esq	500
Warden King, Esq	500
John Stirling, Esq	500
John Rankin, Esq	500
Messrs. Cantlie, Ewan & Co	500
Robert Reford, Esq	500
Messrs. J. & W. Ogilvie	500
Randolph Hersey, Esq	500
John A. Pillow, Esq	500
S. Carsley, Esq	500
D. C. MacCallum, M.D	500
Messrs. S. Greenshields, Son & Co.	500
Jonathan Hodgson, Esq	500
George Ross, M.D	500
T. G. Roddick, M.D	500
Wm. Gardner, M.D	500
Messrs. Cochrane, Cassils & Co.	500
Sir Joseph Hickson	500
Allan Gilmour, Esq., Ottawa	500
R. W. Shepherd, Esq	500
G. E. Fenwick, M.D	300
Miles Williams, Esq	300
G. P. Girdwood, M.D	250
Charles F. Smithers, Esq	250
John Kerry, Esq	250
A. Baumgarten, Esq	250
R. W. Elmenhorst, Esq	250
W. F. Lewis, Esq	250
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Duncan McEachran, Esq., F. R. C. V. S	200
Forward	$46,300

Forward	$46,300
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A. Poussette, M.D. (Sarnia, O.)	10
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J. B. Benson, M.D. (Chatham, N.B.)	5
L. A. Fortier, M.D. (St. David, Q.)	5
J. A. McArthur, M.D. (Fort Elgin, O.)	5
John Campbell, M.D. (Seaforth, O.)	5
Total	$48,906

3. ENDOWED CHAIRS, ETC.

Sir Donald A. Smith, Chair of Pathology in the Faculty of Medicine, endowed in 1893 by the Hon. Sir Donald A. Smith with the sum of..... $50,000

Sir Donald A. Smith, Department of Hygiene in the Faculty of Medicine, endowed in 1893 by the Hon. Sir D. A. Smith with the sum of..... 50,000

Mrs. Mary Dow Bequest—Bequest by the will of the late Mrs. Mary Dow for the Faculty of Medicine, 1893, $10,000, less Government Tax of 10 per cent..... 9,000

John H. R. Molson Donation—Donation by J. H. R. Molson, Esq., in 1893, to the Faculty of Medicine of McGill University, $25,000 for the purchase of land, and $35,000 for additional building and equipment ... 60,000

Walter Drake, Esq., for benefit of Chair of Physiology, an annual donation first given in 1891. Annual value..... 500

Dr. Robert Craik Fund—

Mrs. John McDougall, toward formation of above (1893-94).. 1,000
Jane F. Learmont, bequest do do (1894)..... 3,000 } 4,000

4. MEDALS AND SCHOLARSHIPS.

In 1865 the "Holmes Gold Medal" was founded by the Faculty of Medicine as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine, who should undergo a special examination in all the branches whether Primary or Final.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband, Prof. William Sutherland, M.D., for competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

The David Morrice Scholarship—in the subject of Institutes of Medicine, in the Faculty of Medicine—founded in 1881—value $100. (Terminated in 1883.)

5. LIBRARY, MUSEUM AND APPARATUS.

For the fittings of the Library and Museum of the Faculty of Medicine, 1872.

G. W. Campbell, A.M., M.D.....	$1200	Forward	$2,000
W. E. Scott, M.D.....	200	Robert Craik, M.D.....	200
Wm. Wright, M.D.....	200	Geo. E. Fenwick, M.D.....	200
Robert P. Howard, M.D.....	200	Joseph M. Drake, M.D.....	200
Duncan C. MacCallum, M.D...	200	George Ross, M.A., M.D.	50
Forward	$2000	Total.....	$2,650

The Professors and Lecturers in the Summer Sessions of the Faculty of Medicine..... } Donation to Apparatus, Museum, Library, etc., of the Medical Faculty, 1887, $1,182; 1888, $1,023. } $2,205

For Physiological Laboratory of Faculty of Medicine, 1879.

Dr. Campbell	$100	Forward.	$ 700
Dr. Howard.....	100	Dr. Ross.....	50
Dr. Craik.....	100	Dr. Roddick.....	50
Dr. MacCallum.....	100	Dr. Buller.....	50
Dr. Drake.....	100	Dr. Gardner.....	50
Dr. Godfrey..... ...	100	Dr. Osler.....	50
Dr. McEachran, F.R.C.V.S.....	100	Total	$ 950
Forward.....	$ 700		

Dr. J. C. Cameron..... ....

Alphabetically arranged.

Abbott, H., B.C.L.	$ 60
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Carter, C. B., B.C.L.	100
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Forward	$1,730
Lyman, H. H., M.A.	100
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McCormick, D., B.C.L.	100
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McGoun, A., jun., M.A., B.C.L.	50
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Stephen, C. H., B.C.L.	100
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Stewart, J., M.D.	60
Tait, M. M., B.C.L.	100
Taylor, A. D., B.A., B.C.L.	100
Trenholme, N. W., M.A., D.C.L.	400
Forward	$1,730
Total to date	$3,110

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.

SESSION OF 1896-7.

Montreal:
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1897.

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McGILL UNIVERSITY.

MONTREAL.

ENTRANCE, EXHIBITION AND SCHOLARSHIP EXAMINATIONS,

SEPTEMBER, 1896.

FACULTY OF ARTS.

FIRST YEAR ENTRANCE EXAMINATION.

GREEK.

TUESDAY, SEPTEMBER 15TH :—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.

A

1. Decline (accenting throughout) *χώρα, πατήρ, πόλις* : *ἐγώ, εἷς, μέγας.*

2. (*a*) Give the comparative and superlative of *μέλας, ἡδύς, αἰσχρός, ταχύς.* (*b*) How do you form an adverb from an adjective? How the comparative of an adverb?

3. (*a*) Give the perfect indicative active of *λύω* ; second aorist middle of *λείπω* : present subjunctive, optative, and imperative, active, of *δίδωμι* ; present indicative, active and passive, of *δουλόω* (contracted forms only). (*b*) Distinguish *ἰέναι* and *ἰέναι ; εἶναι* and *εἶναι* : *ὦ* and *ὦ̃* : *εἴην* and *εἶην.* (*c*) What do the Attic writers use for *ἐλεύσομαι* ?

4. (*a*) What cases may *ἐπί* govern? Give examples and meaning in each case. (*b*) When does *πρίν* take the subjunctive after it ? (*c*) Translate and explain the expressions : *ἐν Ἅιδου. τὰ τῶν Ἑλλήνων. πίνειν ὕδατος. ἐδίωξεν αὐτὸν φόνου.*

5. Translate into Greek : (1) He says the citizens are good (Translate in two ways). (2) They sent for the army. (3) They do all things according to law. (4) The citizens trusted the general. (5) The just man is envied.

B.

1. Translate:—

(*a*) Ἄνδρες, ἐάν μοι πεισθῆτε, οὔτε κινδυνεύσαντες οὔτε πονήσαντες τῶν ἄλλων πλέον προτιμήσεσθε στρατιωτῶν ὑπὸ Κύρου. τί οὖν κελεύω ποιῆσαι; νῦν δεῖται Κῦρος ἕπεσθαι τοὺς Ἕλληνας ἐπὶ βασιλέα· ἐγὼ οὖν φημι ὑμᾶς χρῆναι διαβῆναι τὸν Εὐφράτην ποταμὸν πρὶν δῆλον εἶναι ὅ τι οἱ ἄλλοι Ἕλληνες ἀποκρινοῦνται Κύρῳ. Ἢν μὲν γὰρ ψηφίσωνται ἕπεσθαι, ὑμεῖς δόξετε αἴτιοι εἶναι ἄρξαντες τοῦ διαβαίνειν, καὶ ὡς προθυμοτάτοις οὖσιν ὑμῖν χάριν εἴσεται Κῦρος καὶ ἀποδώσει· ἐπίσταται δ' εἴ τις καὶ ἄλλος· ἢν δ' ἀποψηφίσωνται οἱ ἄλλοι, ἄπιμεν μὲν ἅπαντες εἰς τοὔμπαλιν, ὑμῖν δὲ ὡς μόνοις πειθομένοις πιστοτάτοις χρήσεται καὶ εἰς φρούρια καὶ εἰς λοχαγίας, καὶ ἄλλου οὑτινος ἂν δέησθε οἶδα ὅτι ὡς φίλου τεύξεσθε Κύρου.

(*b*) Κῦρος μὲν οὖν οὕτως ἐτελεύτησεν, ἀνὴρ ὢν Πῦρον τῶν μετὰ Κῦρον τὸν ἀρχαῖον γενομένων βασιλικώτατός τε καὶ ἄρχειν ἀξιώτατος, ὡς παρὰ πάντων ὁμολογεῖται τῶν Κύρου δοκούντων ἐν πείρᾳ γενέσθαι. Πρῶτον μὲν γὰρ ἔτι παῖς ὤν, ὅτ' ἐπαιδεύετο καὶ σὺν τῷ ἀδελφῷ καὶ σὺν τοῖς ἄλλοις παισί, πάντων πάντα κράτιστος ἐνομίζετο. Πάντες γὰρ οἱ τῶν ἀρίστων Περσῶν παῖδες ἐπὶ ταῖς βασιλέως θύραις παιδεύονται· ἔνθα πολλὴν μὲν σωφροσύνην καταμάθοι ἄν τις, αἰσχρὸν δ' οὐδὲν οὔτ' ἀκοῦσαι οὔτ' ἰδεῖν ἔστι. Θεῶνται δ' οἱ παῖδες καὶ τοὺς τιμωμένους ὑπὸ βασιλέως καὶ ἀκούουσι, καὶ ἄλλους ἀτιμαζομένους· ὥστε εὐθὺς παῖδες ὄντες μανθάνουσιν ἄρχειν τε καὶ ἄρχεσθαι.

Xen. Anab. Bk. I.

2. Explain (*a*) the case of στρατιωτῶν, ἄλλου οὑτινος, πάντων; (*b*) the mood and tense of πεισθῆτε, εἶναι, καταμαθοι ἄν, ακοῦσαι: (*c*) the case and force of πάντα before κράτιστος, in extract (*b*); and (*d*) the construction of τοῦ διαβαίνειν in extract (*a*).

LATIN.

TUESDAY, SEPTEMBER 15TH:—AFTERNOON, 2 TO 5.

Examiner.....A. JUDSON EATON, M.A., PH.D.

I. LATIN GRAMMAR.

1. Decline the following nouns: (*a*) In the singular and plural: *dies, corpus, vir liber* (together); (*b*) In the singular only: *Aeneas, iusiurandum; vis.* (*c*) In the plural only: *bos, animal, deus, os* ('bone').

2. (*a*) How many classes of adjectives are there in Latin? (*b*) Decline *acer.* (*c*) Compare *felix, bonus, facilis.* (*d*) Form adverbs from each of these adjectives.

3. Write down the principal parts of *subvenio, placo, placco, augeo, edo* ('eat'), *sero* (both), *audeo, fungor,* and name the cases they severally take after them.

4. Inflect in the present subjunctive and future indicative of both voices: *moneo, pono, audio, capio.*

5. When is the conjunction *cum* followed by the indicative, and when by the subjunctive? Illustrate by examples.

6. Translate, and convert the following sentences into indirect discourse: (*a*) Si pecuniam habeat, det. (*b*) Si pecuniam haberet, daret. (*c*) Si quid Caesar me vult, illum ad me venire oportet.

7. Translate into Latin: (1) I am obeyed. (2) He was most dear to the whole nation. (3) He was marching to Rome. (4) They send envoys to Caesar with respect to a surrender. (5) The Gauls have betaken themselves to their own province.

II. CAESAR AND VIRGIL.

1. Translate:

(*a*) Caesar hac oratione Lisci Dumnorigem, Divitiaci fratrem, designari sentiebat, sed, quod *pluribus* praesentibus eas res iactari nolebat, celeriter concilium dimittit, Liscum retinet. Quaerit ex solo ea, quae in conventu *dixerat.* Dicit liberius atque audacius. Eadem secreto ab aliis quaerit; repperit esse vera; Ipsum esse Dumnorigem, summa *audacia,* magna apud plebem propter liberalitatem gratia, cupidum *rerum* novarum. *Compluris* annos portoria reliquaque omnia Aeduorum vectigalia parvo pretio redempta habere, propterea quod illo licente contra liceri audeat nemo. His rebus et suam rem familiarem *auxisse*

et facultates ad largiendum magnas comparasse; magnum numerum equitatus suo sumptu semper alere et circum se habere, neque solum domi, sed etiam apud finitimas civitates largiter posse.—Caesar, B.G., I. 18.

(*b*) *Caesari* omnia uno tempore erant agenda: vexillum proponendum, quod erat insigne cum ad arma concurri oporteret, signum tuba dandum, ab opere revocandi milites, qui paulo longius aggeris petendi causa processerant arcessendi, acies instruenda, milites cohortandi, signum dandum. Quarum rerum magnam partem temporis brevitas et successus hostium *impediebat*. His difficultatibus duae res erant *subsidio*, scientia atque usus militum, quod superioribus proeliis exercitati, quid fieri *oporteret* non minus commode ipsi sibi praescribere quam ab aliis doceri poterant, et quod ab opere singulisque legionibus singulos legatos Caesar discedere nisi munitis castris vetuerat. Hi propter propinquitatem et celeritatem hostium nihil iam Caesaris imperium expectabant, sed per se quae videbantur administrabant.—Caesar, B.G., II. 20.

2. Explain clearly the syntax of italicized words.

3. Translate:

Tum breviter Dido, voltum demissa, profatur:
" Solvite corde metum, Teucri, secludite curas.
Res dura et regni novitas me talia cogunt
moliri, et late finis custode tueri.
Quis genus Aeneadum, quis Troiae nesciat urbem,
virtutesque virosque, aut tanti incendia belli ?
Non obtusa adeo gestamus pectora Poeni;
nec tam aversus equos Tyria Sol iungit ab urbe.
Seu vos Hesperiam magnam Saturniaque arva,
sive Erycis finis regemque optatis Acesten,
auxilio tutos dimittam, opibusque iuvabo.
voltis et his mecum pariter considere regnis;
urbem quam statuo, vestra est: subducite navis;
Tros Tyriusque mihi nullo discrimine agetur.
atque utinam rex ipse, Noto compulsus eodem,
adforet Aeneas !—Virgil, Aen. I.

4. Write out the first four lines, dividing into feet and marking the quantity *beneath* each syllable, and the principal caesura of each verse.

5. Write brief explanatory notes on the following: (*a*) voltum demissa. (*b*) Tyria urbe. (*c*) Saturnia arva. (*d*) Erycis finis.

6. Give a brief life of Virgil.

GEOMETRY—ALGEBRA—ARITHMETIC.

WEDNESDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiners, ... { A. JOHNSON, LL.D. / H. M. TORY, M.A.

1. On a given straight line construct a segment of a circle containing an angle equal to a given acute angle.

2. In a circle straight *lines that are equidistant from the centre are equal.*

3. Divide a straight line into two parts so that the rectangle under the whole line and one part shall be equal to the square on the other.

4. Describe a square equal to a given rectilinear figure.

5. The three angles of any triangle are equal to two right angles.

(*a*) Divide a right angle into three equal parts.

6. Parallelograms upon equal bases and between the same parallels are equal.

7. Solve the equations.

(*a*) $x^2 - 14x = 20$

(*b*) $\sqrt{5(x+2)} = \sqrt{5x} + 2$

(*c*) $2x + 3y - 8 = 0,\ 7x - y - 5 = 0$

(*d*) $\frac{8x+5}{14} + \frac{7x-3}{6x+2} = \frac{4x+6}{7}$

8. Reduce to its lowest terms

$$\frac{3x^4 - 14x^3 - 9x + 2}{2x^4 - 9x^3 - 14x + 3}$$

9. Shew that

$$\frac{1}{(a-b)(a-c)} + \frac{1}{(b-a)(b-c)} + \frac{1}{(c-a)(c-b)} = 0.$$

10. Find two consecutive numbers such that the half and the fifth of the first taken together shall be equal to the third and the fourth of the second taken together.

11. State the length of a meter in feet and inches, and find the number of millimetres in 30 inches.

12. A rectangular block of stone measures 3 by 4 by 5 feet. Find the distance between the opposite corners.

13. Find the compound interest on $1,500 for 3 years at 5 per cent.

FACULTIES OF ARTS AND APPLIED SCIENCE.

FIRST AND SECOND YEAR ENTRANCE.

BRITISH HISTORY AND ESSAY.

(Write your name (in full) and Faculty on the outside of the book or books you use).

THURSDAY, SEPTEMBER 17TH :—MORNING, 10.30 TO 12.30.

Examiners, ... { CHARLES W. COLBY, M.A., PH.D. / PAUL T. LAFLEUR, M.A.

FIRST YEAR.

A.—HISTORY.

Answer any five questions.

1. Write an account of the spread and organization of Christianity in the British islands prior to the reign of Alfred the Great.

2. Give a list of the chief constitutional measures which were enacted between the Conquest and the signing of Magna Charta.

3. Describe the main course of hostilities during the wars of the Roses.

4. What part did England take in wars against Louis XIV ?

5. Write what you know about the union of Scotland, Ireland and Wales with England.

6. Enumerate all the members of the British imperial group at the present time.

7. Make notes on Joan of Arc ; Duke of Marlborough ; William Pitt, the younger ; Canning ; the Duke of Wellington as a statesman.

SECOND YEAR.

Answer the first five questions.

B.—ESSAY.

Write an essay of at least two pages on any one of the following subjects :

(*a*) Religious Liberty.
(*b*) A Recent Scientific Discovery.
(*c*) A Great Traveller.

FACULTIES OF ARTS AND APPLIED SCIENCE.

FIRST YEAR.

ENGLISH GRAMMAR AND ANALYSIS.

(N.B.—The analysis is compulsory. You are requested to write your name (in full) and Faculty on the outside of the book or books you use).

THURSDAY, SEPTEMBER 17TH:—MORNING, 9 TO 10.30.

Examiners,..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Distinguish between the sounds of b and p; t and d; l and m. Name the *oa* in *boat* and the *au* in *haul*, and justify the term you use.

2. State, in general terms, the functions of inflection in English. Explain the forms *children, alms, songstress.*

3. Show that the case of the relative does not depend on the case of the antecedent. Mention a verb of incomplete predication, and use (*a*) a noun, (*b*) an adjective, as its complement. Use the same noun and adjective attributively.

4. Of what may the subject of a verb consist ?

5. Show that a prepositional phrase, a noun in the possessive case and a clause may be used as the equivalent of an adjective. What may be used as the equivalent of an adverb ? Give examples.

6. Name the following pronouns : this, what, some, neither.

7. Write four sentences, using a co-ordinate conjunction in the first and second, and a subordinate conjunction in the third and fourth. What kind of sentence is each, and to what sub-class do the conjunctions which you have written belong ?

8. What varieties of the present tense are found in English ?

9. Parse and analyse:
   (a) He returns home.
   (b) He likes stealing.
   (c) He likes a stealing companion.

Analyse: If I catch him, I will give him what he deserves.

FACULTY OF ARTS.

SECOND YEAR.

(Candidates will answer questions 1, 2, 3, 4, 6, 9 of the First Year paper, and also the following):

10. Notice changes which words passing from Latin through French into English, have undergone.

11. Show by examples the meanings of the following prefixes and suffixes: a, wan, with, ish, meal, le, en.

12. Derive the, she, that, they, their, this, those, naught, one, twice, second.

13. Explain and illustrate the terms hybrid, anomalous verb, objective complement, unlaut, ablaut.

EXAMENS D'ENTRÉE—LETTRES ET SCIENCES.

PREMIÈRE ANNÉE.

LE 18 SEPTEMBRE, DE 9 À 12 HRS.

Examinateurs, ... { M. INGRÈS. J. L. MORIN.

A. GRAMMAIRE.

1. Remplacer les infinitifs par les formes qu'exige le sens.

LE ROI ET LE PAYSAN.

Henri IV (être) à la chasse et (écarter) de sa suite (rencontrer) un paysan (asseoir) au pied d'un arbre sur le bord de la route.

"Que (faire) tu là? lui (dire) Henri IV.—Je (attendre) pour voir passer le roi.—Si tu (vouloir) monter derrière moi, (ajouter) Henri, je te (conduire) dans un endroit où tu (pouvoir) le voir tout à ton aise."

Le paysan (monter), et chemin faisant (demander) comment il (pouvoir) reconnaître le roi.

"Tu ne (avoir) qu'à regarder celui qui (garder) son chapeau pendant que tous les autres (avoir) la tête nue."

Henri (rejoindre) la chasse, et tous les seigneurs le (saluer).

"Eh bien! lui (dire) le paysan, où (être) le roi?—Ma foi, mon ami, il (falloir) que ce (être) toi ou moi, (répondre) le roi, car il n'y (avoir) que nous deux qui (avoir) le chapeau sur la tête."

2. Remplacer les tirets par des mots convenant au sens.

Certains enfants tuent — mouches, arrachent — — aux oiseaux, tourment — —, sous prétexte — — sont — simples animaux. — barbarie — la marque d'un — cœur.

Un — empereurs romains les — cruels, Domitien, s'amusait, au temps

— — enfance, — percer des mouches — un poinçon; plus —, le spectacle favori — monarque était — faire jeter, dans — cirque, — chrétiens — bêtes —.

3. Devant quelles voyelles les verbes en *cer* prennent-ils la cédille, et pourquoi ?

4. Comment forme-t-on le féminin des adjectifs terminés en *er* au masculin, et quel changement en résulte-t-il dans la prononciation, pour la plupart ?

5. Dater en toutes lettres.

B.

Traduisez en anglais :

M. Ribot, ancien premier ministre de France, est arrivé à Montréal hier.

Nous saluons avec une vive satisfaction la présence au milieu de nous, sur cette terre autrefois française, d'un des hommes politiques les plus distingués de la troisième République, d'un grand citoyen qui honore notre vieille mère de son fier talent et de sa haute valeur.

Nous espérons que son séjour à Montréal sera assez long pour permettre à ses nombreux admirateurs et à tous les chauds amis de la France, de se réunir autour de lui en un banquet, pour lui manifester nos sentiments et pour lui offrir les hommages de la province fidèlement française de Québec.

Nous espérons encore que M. Ribot sera assez longtemps sur nos rives pour nous étudier et nous connaître, pour se rendre compte de ce qu'est la cause française au Canada, et pour pouvoir dire bien des bonnes choses à nos cousins de France sur notre pays.

La Patrie.

FIRST YEAR ENTRANCE EXAMINATION IN GERMAN.

DONALDA DEPARTMENT.

FRIDAY, SEPT. 18TH :—AFTERNOON, 2 TO 5.

Examiner,.....L. R. GREGOR, B.A., PH.D.

1. (*a*) Und ein Gott ist, ein heiliger Wille lebt,
Wie auch der menschliche wanke;
Hoch über der Zeit und dem Raume webt
Lebendig der höchste Gedanke ;
Und ob alles im ewigen Wechsel kreist.
Es beharret im Wechsel ein ruhiger Geist.

Die drei Worte bewahret euch, inhaltschwer,
Sie pflanzet von Munde zu Munde ;
Und stammen sie gleich nicht von aussen her,
Euer Inneres giebt davon Kunde.

Dem Menschen ist nimmer sein Wert geraubt,
So lang er noch an die drei Worte glaubt.

SCHILLER.

(*b*) Dieser aber nahm und schliff den Stein künstlich in regelmäßige Flächen und Ecken, und herrlich strahlte nun der geschliffene Demant. „Siehe," sagte darauf der Vater, „hier ist der Stein, den du mir gabst." Da erstaunte der Knabe über des Gesteines Glanz und herrliches Funkeln und rief aus: „Mein Vater, wie vermochtest du dieses?" Der Vater sprach: „Ich erkannte des rohen Steines Tugend und verborgene Kräfte; so befreite ich ihn von der ihn umhüllenden Schlacke. Jetzt strahlt er mit seinem natürlichen Glanze."

Darnach, als der Knabe ein Jüngling geworden war, gab ihm der Vater den veredelten Stein, als Sinnbild von des Lebens Wert und Würde.

Krummacher.

2. Translate into German:—

(*a*) I shall not be at home before half past ten. (*b*) The soldier was wounded by a ball. (*c*) This earthquake is the most severe which we have had. (*d*) When we hastened home yesterday, it was raining heavily. (*e*) Place this chair, if you please, behind the stove for me. (*f*) We always hoped that William would learn German. (*g*) When we were going home, we met our friends who were coming out of church. (*h*) The Reformation took place in the sixteenth century. (*i*) He has been here since yesterday and must wait three days more for the ship. (*j*) The girl hangs the bird cage before the window in the sun.

3. Give the pres. infinitive, first pers. sing. imperf. indic. and the past participle of the following verbs: forget, read, sit, take, command, fly, flee, obey, suffer, ride, copy, be silent.

4. Decline *the large branch* in the singular.

5. What cases do the following prepositions severally govern, durch, in, neben, bei, gegenüber.

6. Decline personal pronouns in all persons in the singular.

7. State what you know about the order of :—(*a*) pronouns in general, (*b*) personal pronouns, (*c*) adverbs. (*d*) Turn the following sentence into the passive voice, Er hat mir Hülfe verſprochen. (*e*) What kind of antecedents may the pronoun was have ?

8. The count was with his huntman and *his* dogs. Translate the foregoing into German, commenting fully on the rendering of *his*.

9. Enumerate the modal auxiliaries, giving all meanings and uses of any two of them. Illustrate with examples.

SECOND YEAR ENTRANCE AND FIRST YEAR SUPPLEMENTAL.

GREEK.

TUESDAY, SEPTEMBER 15TH :—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.

NOTE :— Candidates are required to do *any two* of the following sections, I.-III.

I. XENOPHON, HELLENICS, I.

(A) Οἱ δη ἐν οἴκῳ Ἀθηναῖοι, ἐπειδὴ ἠγγέλθη ἡ ναυμαχία, χαλεπῶς εἶχον τῷ Ἀλκιβιάδῃ, οἰόμενοι δὶ ἀμελειάν τε καὶ ἀκράτειαν ἀπολωλεκέναι τὰς ναῦς, καὶ στρατηγοὺς εἵλοντο ἄλλους δέκα, Κόνωνα, Διομέδοντα, Λέοντα, Περικλέα, Ἐρασινίδην, Ἀριστοκράτην, Ἀρχέστρατον, Πρωτόμαχον, Θράσυλλον, Ἀριστογένην. Ἀλκιβιάδης, μέν οὖν πονήρως καὶ ἐν τῇ στρατιᾷ φερόμενος, λαβὼν τριήρη μίαν ἀπέπλευσεν εἰς τὰ ἑαυτοῦ τείχη. μετὰ δὲ ταῦτα Κόνων ἐκ τῆς Ἄνδρου σὺν αἷς εἶχε ναυσὶν εἴκοσι ψηφισαμένου Ἀθηναίων εἰς Σαμον ἔπλευσεν ἐπὶ τὸ ναυτικόν. ἀντὶ δ Κόνωνος εἰς Ἄνδρον ἔπεμψαν Φανοσθένην, τέτταρας ναῦς ἔχοντα.

(B) Οἱ δὲ ταῦτ' ἐπῄνουν καὶ ἐκέλευον αὐτὸν τάξαι τῷ ναύτῃ δραχμὴν Ἀττικήν, διδάσκοντες ὅτι ἂν οὗτος ὁ μισθὸς γένηται, οἱ τῶν Ἀθηναίων ναῦται ἀπολείψουσι τὰς ναῦς, καὶ μείω χρήματα ἀναλώσει. ὁ δὲ καλῶς μὲν ἔφη αὐτοὺς λέγειν, οὐ δυνατὸν δ' εἶναι παρ' ἃ βασιλεὺς ἐπέστειλεν αὐτῷ ἄλλα ποιεῖν. εἶναι δὲ καὶ τὰς συνθήκας οὕτως ἐχούσας, τριάκοντα μνᾶς ἑκάστῃ νηὶ τοῦ μηνὸς διδόναι, ὁπόσας ἂν βούλωνται τρέφειν Λακεδαιμονιοι. ὁ δὲ Λύσανδρος τότε μὲν ἐσιώπησε· μετὰ δὲ τὸ δεῖπνον, ἐπεὶ αὐτῷ προπιὼν ὁ Κῦρος ἤρετο, τί ἂν μάλιστα χαρίζοιτο ποιῶν, εἶπεν ὅτι εἰ πρὸς τὸν μισθὸν ἑκάστῳ ναύτῃ ὀβολὸν προσθείης. ἐκ δὲ τούτου τέτταρες ὀβολοὶ ἦν ὁ μισθός, πρότερον δὲ τριώβολον.

(*a*) Οἰομενοι δὶ ἀμέλειαν κ. τ. λ.—Write a short note on the general character and conduct of Alcibiades, showing what grounds may have existed to justify the imputation here made. (*b*) τῷ ναύτῃ : ἑκάστῳ ναύτῃ (Ext. B)—do these express the same idea? (*c*) Define δραχμὴν Ἀττικήν, τριάκοντα μνᾶς, ὀβολός. (*d*) Write explanatory notes on : προπιὼν—τί—χαρίζοιτο—ὅτι—προσθείης (supply the apodosis).

II. HOMER, ODYSSEY, Bk. XI.

,,ὦ Ὀδυσεῦ. τὸ μὲν οὔτι σ' ἐΐσκομεν εἰσορόωντες
ἠπεροπῆά τ' ἔμεν καὶ ἐπίκλοπον, οἷά τε πολλοὺς
βόσκει γαῖα μέλαινα πολυσπερέας ἀνθρώπους
ψεύδεά τ' ἀρτύνοντας, ὅθεν κέ τις οὐδὲ ἴδοιτο·
σοὶ δ' ἔπι μὲν μορφὴ ἐπέων, ἔνι δὲ φρένες ἐσθλαὶ,
μῦθον δ' ὡς ὅτ' ἀοιδὸς ἐπισταμένως κατελεξας,
πάντων τ' Ἀργείων σέο τ' αὐτοῦ κήδεα λυγρά.
ἀλλ' ἄγε μοι τόδε εἰπὲ καὶ ἀτρεκέως κατάλεξον,
εἴ τινας ἀντιθέων ἑτάρων ἴδες, οἵ τοι ἅμ' αὐτῷ

Ἴλιον εἰς ἅμ' ἕποντο καὶ αὐτοῦ πότμον ἑπέσπον.
νὺξ δ' ἤδε μάλα μακρὴ ἀθέσφατος· οὐδέ πω ὥρη
εὔδειν ἐν μεγάρῳ· σὺ δέ μοι λέγε θέσκελα ἔργα.
καὶ κεν ἐς ἠῶ δῖαν ἀνασχοίμην, ὅτε μοι σὺ
τλαίης ἐν μεγάρῳ τὰ σὰ κήδεα μυθήσασθαι."

(*a*) Derive ἠπεροπῆά, ἐπίκλοπον, πολυσπερέας, ἀοιδός, ἀθέσφατος. (*b*) To what is ἔπι equivalent? (*c*) πάντων Ἀργείων: how would it be expressed in Attic? (*d*) Classify the optatives ἀνασχοίμην and τλαίης. (*e*) Scan the last four lines.

III. HOMER, ILIAD, Bk. VI.

Ὣς ἄρα φωνήσας ἀπέβη κορυθαίολος Ἕκτωρ,
αἶψα δ' ἔπειθ' ἵκανε δόμους εὐναιετάοντας,
οὐδ' εὗρ' Ἀνδρομάχην λευκώλενον ἐν μεγάροισιν,
ἀλλ' ἥγε ξὺν παιδὶ καὶ ἀμφιπόλῳ ἐυπέπλῳ
πύργῳ ἐφεστήκει γοόωσά τε μυρομένη τε.
Ἕκτωρ δ' ὡς οὐκ ἔνδον ἀμύμονα τέτμεν ἄκοιτιν,
ἔστη ἐπ' οὐδὸν ἰών, μετὰ δὲ δμωῇσιν ἔειπεν·
„εἰ δ' ἄγε μοι, δμωαί, νημερτέα μυθήσασθε.
πῇ ἔβη Ἀνδρομάχη λευκώλενος ἐκ μεγάροιο;
ἠέ πη ἐς γαλόων ἢ εἰνατέρων ἐυπέπλων,
ἢ ἐς Ἀθηναίης ἐξοίχεται, ἔνθα περ ἄλλαι
Τρωαὶ ἐυπλόκαμοι δεινὴν θεὸν ἱλάσκονται;"
τὸν δ' αὖτ' ὀτρηρὴ ταμίη πρὸς μῦθον ἔειπεν·
Ἕκτορ, ἐπεὶ μάλ' ἄνωγας ἀληθέα μυθήσασθαι,
„οὔτε πῃ ἐς γαλόων οὔτ' εἰνατέρων ἐυπέπλων,
οὔτ' ἐς Ἀθηναίης ἐξοίχεται, ἔνθα περ ἄλλαι
Τρωαὶ ἐυπλόκαμοι δεινὴν θεὸν ἱλάκονται,
ἀλλ' ἐπὶ πύργον ἔβη μέγαν Ἰλίου, οὕνεκ' ἄκουσεν
τείρεσθαι Τρῶας, μέγα δὲ κράτος εἶναι Ἀχαιῶν.
ἡ μὲν δὴ πρὸς τεῖχος ἐπειγομένη ἀφικάνει,
μαινομένῃ ἐικυῖα. φέρει δ' ἅμα παῖδα τιθήνη."

(*a*) Scan the first five lines. (*b*) Write out out the Attic forms of *ἐύ, γοόωσα, μένηοι.* (*c*) Give the root, tense, and formation of the following verbs: *βεβρωκώς, δέδορκεν, πέπυστο, τέτμεν, ἄνωγας.* (*d*) Give the meaning and derivation of: *ἄσβεστον, ἀμβατός, τηλεκλειτοί.* (*e*) Explain the expressions *ἐς γαλόων* and *ἐς Ἀθηναίης.* (*f*) Give an outline of the story of the previous books of the Iliad, and narrate the chief incidents in the sixth book.

SECOND YEAR ENTRANCE AND FIRST YEAR SUPPLEMENTAL.

LATIN.

TUESDAY, SEPTEMBER 15TH:—AFTERNOON 2 TO 5.

Examiner,.....A. JUDSON EATON, M.A., PH.D.

I. CICERO, DE AMICITIA.

(A) Cumque plurimas et maximas commoditates amicitia contineat, tum illa nimirum praestat omnibus quod bona spe praelucet in posterum nec debilitari animos aut cadere patitur. Verum enim amicum qui intuetur, tamquam exemplar aliquod intuetur sui. Quocirca et absentes adsunt et egentes abundant et imbecilli valent, et, quod difficilius dictu est, mortui vivunt; tantus eos honos, memoria, desiderium prosequitur amicorum. Ex quo illorum beata mors videtur, horum vita laudabilis. Quod si exemeris ex rerum natura benevolentiae coniunctionem, nec domus ulla nec urbs stare poterit; ne agri quidem cultus permanebit.

(B) Itaque verae amicitiae difficillime reperiunter in eis qui in honoribus reque publica versantur. Ubi enim istum invenias qui honorem amici anteponat suo? Quid? haec ut omittam, quam graves, quam difficiles plerisque videntur calamitatum societates, ad quas non est facile inventu qui descendant: quamquam Ennius recte:

Amicus certus in re incerta cernitur:

tamen haec duo levitatis et infirmitatis plerosque convincunt, aut si in bonis rebus contemnunt, aut in malis deserunt.

Qui igitur utraque in re gravem, constantem, stabilem se in

amicitia praestiterit, hunc ex maxime raro hominum genere iudicare debemus et paene divino.

(*a*) What other reading occurs for *bona spe* (Ext. A), and how is its construction to be explained? (*b*) Account for the subjunctives in the first extract. (*c*) Who was Ennius (Ext. B)? (*d*) Under what circumstances, and about what date was the *De Amicitia* written? (*e*) Distinguish refert, plecto, quoque, according to the quantity of the penult.

II. Sallust, Catiline.

(A) Quae homines arant, navigant, aedificant, virtuti omnia parent. Sed multi mortales, dediti ventri atque somno, indocti incultique vitam sicuti peregrinantes transiere: quibus profecto contra naturam corpus *voluptati* anima oneri fuit: Eorum ego vitam mortemque iuxta aestumo, quoniam de utraque siletur. Verum enimvero is demum mihi vivere atque frui anima videtur, qui *aliquo negotio* intentus praeclari facinoris aut *artis bonae* famam quaerit. Sed in magna copia rerum aliud alii natura iter ostendit.

(B) Ea cum Ciceroni *nuntiarentur*, ancipiti malo permotus, quod neque urbem ab insidiis privato consilio longius tueri poterat, neque exercitus Manli quantus aut quo consilio foret satis compertum habebat, rem ad senatum refert, iam antea volgi rumoribus exagitatum. Itaque, quod plerumque in atroci negotio solet, senatus decrevit, *darent operam consules ne quid res publica detrimenti caperet.* Ea potestas per senatum more Romano magistratui maxuma permittitur, exercitum parare, bellum gerere, coercere omnibus modis socios atque civis, *domi militiaeque* imperium atque iudicium summum habere: aliter sine populi iussu nullius earum rerum consuli ius est. Post paucos dies L. Saenius senator in senatu litteras recitavit, quas *Faesulis* adlatas sibi dicebat, in quibus scriptum erat, G. Manlium arma cepisse cum magna multitudine ante diem VI. Kalendas Novembris. Simul, id quod in tali re solet, alii portenta atque prodigia nuntiabant, alii conventus fieri, arma portari, Capuae atque in Apulia servile bellum moveri.

(*a*) Explain clearly the principles of syntax for the case of nouns, and mood and tense of verbs, italicized in the above passages. (*b*) Derive *ostendit, ancipiti, portenta.* (*c*) *darent operam . . . . . caperet:* what changes from the direct words of the decree? (*d*) Write down some of the peculiarities of Sallust's style.

III. Virgil, Aeneid, Bk. VI.

"Principio caelum ac terras, camposque liquentes,
Lucentemque globum Lunae Titaniaque astra,
Spiritus intus alit, totamque infusa per artus
Mens agitat molem, et magno se corpore miscet.
Inde hominum pecudumque genus, vitaeque volantum,
Et quae marmoreo fert monstra sub aequore pontus.
Igneus est ollis vigor et caelestis origo
Seminibus, quantum non noxia corpora tardant,
Terrenique hebetant artus moribundaque membra.
Hinc metuunt, cupiuntque; dolent, gaudentque: neque auras
Despiciunt clausae tenebris et carcere caeco.
Quin et supremo cum lumine vita reliquit,
Non tamen omne malum miseris, nec funditus omnes
Corporeae excedunt pestes; penitusque necesse est
Multa diu concreta modis inolescere miris."

(*a*) To whom are these words ascribed by the poet? What doctrine does he proceed to explain in this passage? (*b*) What are the Greek equivalents for *spiritus* and *mens?* Distinguish accurately between these two words. (*c*) Complete, as you may remember, the thought, as to the time, place, and means of purification. (*d*) Scan the following lines:

Gorgones, Harpyiaeque, et forma tricorporis umbrae,
Nomen et arma locum servant: te, amice, nequivi.

(*e*) Explain syntax of italicized words:

Isque....*alacris* palmas utrasque tetendit.
Quas ego *terras* et quanta per aequora vectum Accipio.
(Charon) *velis* ministrat.
Advolvunt ingentes *montibus* ornos.
Quam *vellent* aethere in alto nunc.
Teque *aspectu* ne subtrahe nostro.

Si qua fata aspera *rumpas*, Tu Marcellus *eris:* compare this with the regular Latin form, and with the Greek.

IV. Cicero, in Catilinam, I. and II.

(*a*) Nunc, ut a me, patres conscripti, quandam prope iustam patriae querimoniam detester ac deprecer, percipite, quaeso, diligenter quae dicam, et ea penitus animis vestris mentibusque mandate. Etenim si mecum patria, quae mihi vita mea multo est carior, si cuncta Italia, si omnis res publica, loquatur: M. Tulli, quid agis? Tune eum, quem esse hostem

comperisti, quem ducem belli futurum vides, quem exspectari imperatorem in castris hostium sentis, auctorem sceleris, principem coniurationis, evocatorem servorum et civium perditorum, exire patiere, ut abs te non emissus ex urbe, sed immissus in urbem esse videatur ? Non hunc in vincula duci, non ad mortem rapi, non summo supplicio mactari imperabis ?

(*b*) Sed cur tam diu de uno hoste loquimur, et de hoste qui iam fatetur se esse hostem, et quem, quia (quod semper volui) murus interest, non timeo: de eis qui dissimulant, qui Romae remanent, qui nobiscum sunt, nihil dicimus? Quos quidem ego, si ullo modo fieri possit, non tam ulcisci studeo quam sanare sibi ipsos, placare rei publicae, neque id qua re fieri non possit, si me audire volent, intellego. Exponam enim vobis, Quirites, ex quibus generibus hominum istae copiae comparentur: deinde singulis medicinam consili atque orationis meae, si quam potero, adferam.

(*a*) What case is *M. Tulli ?* explain the form. (*b*) Define the following expressions: *Pontifex Maximus; Iupiter Stator; consul designatus; Quirites; Palatium* (give English derivative, and explain how it gets its present meaning.) (*c*) Briefly sketch Catiline's life.

ENTRANCE EXAMINATIONS.

SECOND YEAR.

ENGLISH HISTORY AND ESSAY.

THURSDAY, SEPTEMBER 17TH:—10.30 A.M. TO 12.30 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

Candidates will be held responsible for the *whole* of the First Year paper on History, and will follow the directions given for the Essay.

SUPPLEMENTAL EXAMINATIONS.

ENGLISH LITERATURE.

FIRST YEAR.

1. Write on the characteristics of the Celt and their expression in literature.

2. Show that Beowulf has mythological and historical aspects.

3. Why are the songs of the Wandering Scholars important, and what is their character ?

4. Give an outline of a typical Chaucerian poem.

5. Give some account of Gabriel Harvey, Lydgate, John Lyly.

6. Write on the Spectator and its criticism.

7. What do you know of Dryden's Essay of Dramatic Poesie?

8. Write on the literary causes of the French Revolution.

SECOND YEAR.

1. Write on the literary causes of the French Revolution.

2. Give an account of Wordsworth's Prelude.

3. Name Scott's longer poems and display his poetical qualities.

4. Sketch the early career of Shelley, and give some account of his poetical works.

5. Write on the poetry of Keats.

EXAMENS D'ENTRÉE.

LE 18 SEPTEMBRE, DE 9 H. A MIDI.

IIIME. ANNÉE.

Examinateurs, ... J. L. MORIN.

A. DICTÉE.

B. RÉDACTION.

Donner le contraire des mots entre parenthèses. Remplacer le titre L'Hiver par le Printemps.

L'HIVER.

Le (triste hiver) est une saison de (mort) et de (repos); les premiers (froids) sont le signal du (sommeil) de la nature : tout (s'anéantit) ; les arbres se (dépouillent) de leurs feuilles, et les bocages, (attristés) par le

(silence) des oiseaux, (quittent) leur verte parure. La sève, longtemps (libre) (s'arrête) dans les vaisseaux et (cesse) de nourrir les branches ; les troupeaux (regagnent) leurs étables et (abandonnent) les campagnes ; le laboureur s'arrache au (travail) et (quitte) les travaux champêtres. Les jours sont plus (courts) les nuits plus (longues) ; le soleil reste (moins) longtemps sur l'horizon et nous envoie plus (obliquement) sa lumière et ses rayons. Quels (sombres) tableaux présente alors la nature (enlaidie) !

(L'hiver) correspond à la (vieillesse), (dernière) période de la vie. Le (vieillard) est (triste) comme lui ; il aime le (repos) et (fuit) les plaisirs ; il est (malheureux) parce qu'il regarde (le passé).

C. Grammaire.

1. Remplacer les tirets par des mots et les infinitifs par les formes convenant au sens.

Un jeune homme (vouloir) noyer — chien. Il — (faire) monter avec lui — — bateau, se (éloigner) — rivage, et arrivé au milieu — courant, il — (saisir) et le (jeter) — — rivière.

Le pauvre chien (disparaître) — l'eau, (remonter) cependant — — surface et (faire) des efforts désespérés — regagner — barque ; mais — fois — l'animal (aller) l'atteindre — maître — (repousser) d'un — de rame.

Cette lutte cruelle — le chien et l'homme (durer) — quelque temps. quand celui-ci. impatienté, (saisir) la rame à — mains et — (donner) un coup vigoureux sur — tête du — chien ; mais en même temps il (perdre) l'équilibre et (tomber) lui-même au fond — l'eau.

Alors — scène (changer). On (voir) le — animal plonger, saisir son maître et — ramener sur — rivage après (faillir) vingt fois (emporter) par le courant.

2. Dater en toutes lettres.

D. Examen Oral.

SECOND YEAR.

SUPPLEMENTAL IN MODERN HISTORY.

Thursday, Sept. 17th :—Morning, 9 to 12.

Examiner, ...C. W. Colby, M.A., Ph.D.

Write what you know about :

1. Voltaire, Turgot, Necker.
2. The National Convention.
3. The reform of Stein.
4. The reign of Louis Philippe.
5. The war of 1859.
6. The war of 1866.

SECOND YEAR.

SUPPLEMENTAL EXAMINATION.

GREEK.

TUESDAY, SEPTEMBER 15TH:—MORNING, 9 to 12.

Examiner,..... A. JUDSON EATON, M.A., PH.D.

(A) PLATO, APOLOGY.

1. Translate:—

Τελευτῶν οὖν ἐπὶ τοὺς χειροτέχνας ἦα· ἐμαυτῷ γὰρ ξυνῄδειν οὐδὲν ἐπισταμένῳ, ὡς ἔπος εἰπεῖν, τούτους δέ γ' ἤδειν ὅτι εὑρήσοιμι πολλὰ καὶ καλὰ ἐπισταμένους. καὶ τούτου μὲν οὐκ ἐψεύσθην, ἀλλ' ἠπίσταντο ἃ ἐγὼ οὐκ ἠπιστάμην καί μου ταύτῃ σοφώτεροι ἦσαν. ἀλλ', ὦ ἄνδρες Ἀθηναῖοι, ταὐτόν μοι ἔδοξαν ἔχειν ἁμάρτημα, ὅπερ καὶ οἱ ἀγαθοὶ δημιουργοί· διὰ τὸ τὴν τέχνην καλῶς ἐξεργάζεσθαι ἕκαστος ἠξίου καὶ τἆλλα τὰ μέγιστα σοφώτατος εἶναι, καὶ αὐτῶν αὕτη ἡ πλημμέλεια ἐκείνην τὴν σοφίαν ἀπέκρυπτεν· ὥστ' ἐμὲ ἐμαυτὸν ἀνερωτᾶν ὑπὲρ τοῦ χρησμοῦ, πότερα δεξαίμην ἄν οὕτως ὥσπερ ἔχειν, μήτε τι σοφὸς ὢν τὴν ἐκείνων σοφίαν, μήτε ἀμαθὴς τὴν ἀμαθίαν, ἢ ἀμφότερα ἃ ἐκεῖνοι ἔχουσιν ἔχειν. ἀπεκρινάμην οὖν ἐμυτῷ καὶ τῷ χρησμῷ, ὅτι μοι λυσιτελοῖ ὥσπερ ἔχω ἔχειν.

2. Translate and classify the following conditional sentences:—

(α) ἀλλ' ἐὰν μοὶ πείθησθε, φείσεσθέ μοι. (β) καὶ ἴσως ἂν διὰ ταῦτ, ἀπέθανον, εἰ μὴ ἡ ἀρχὴ διὰ ταχέων κατελύθη. (γ) εἰ οὖν με ἐπὶ τούτοις, ἀφίοιτε, εἴποιμ' ἄν ὑμῖν, (δ) εἰ δὲ δαιμόνια νομίζω, καὶ δαιμόνας δήπου πολλὴ ἀνάγκη νομίζειν μέ ἐστιν. (ε) πολλὴ γὰρ ἂν εὐδαιμονία εἴη περὶ τοὺς νέους, εἰ εἷς μὲν μόνος αὐτοὺς διαφθείρει. (ζ) καὶ ἐπειδάν τις αὐτοὺς ἐρωτᾷ ὅ τι διδάσκων, ἔχουσιν οὐδὲν εἰπεῖν. (η) νῦν δὲ ὡς ἔοικεν, εἰ τριάκοντα μόναι μετέπεσον τῶν ψήφων, ἀποπεφεύγη ἄν.

In the last example, carefully explain the form *ἀποπεφεύγη*.

3. Write briefly on (*a*) the constitution of the Athenian court, (*b*) the personality of Socrates.

(B) AESCHYLUS, PROMETHEUS VINCTUS.

4. Translate :—

ΩΚΕΑΝΟΣ.

ἥκω δολιχῆς τέρμα κελεύθου
διαμειψάμενος πρός σε, Προμηθεῦ,
τὸν πτερυγωκῆ τόνδ' οἰωνὸν
γνώμῃ στομίων ἄτερ εὐθύνων.
ταῖς σαῖς δὲ τύχαις, ἴσθι, συναλγῶ·
τό τε γάρ με, δοκῶ, ξυγγενὲς οὕτως
ἐσαναγκάζει, χωρίς τε γένους
οὐκ ἔστιν ὅτῳ μείζονα μοῖραν
νείμαιμ' ἢ σοί.

γνώσει δὲ τάδ' ὡς ἔτυμ', οὐδὲ μάτην
χαριτογλωσσεῖν ἔνι μοι· φέρε γὰρ,
σήμαιν' ὅτι χρή σοι ξυμπράσσειν·
οὐ γάρ ποτ' ἐρεῖς ὡς Ὠκεανοῦ
φίλος ἐστὶ βεβαιότερός σοι.

ΠΡ. *ἔα, τί χρῆμα ; καὶ σὺ δὴ πόνων ἐμῶν*
ἥκεις ἐπόπτης ; πῶς ἐτόλμησας, λιπὼν
ἐπώνυμόν τε ῥεῦμα καὶ πετρηρεφῆ
αὐτόκτιτ' ἄντρα, τὴν σιδηρομήτορα
ἐλθεῖν ἐς αἶαν ; ἦ θεωρήσων τύχας
ἐμὰς ἀφῖξαι καὶ ξυνασχαλῶν κακοῖς ;
δέρκου θέαμα, τόνδε τὸν Διὸς φίλον,
τὸν ξυγκαταστήσαντα τὴν τυραννίδα,
οἵαις ὑπ' αὐτοῦ πημοναῖσι κἀμπτομαι.

5. (*a*) Name the metre of the first passage of 4, and scan the last three lines. (*b*) Describe the metre of the second extract, and scan the first two lines. (*c*) Derive πτερυγωκῆ, ἐπόπτης, αὐτοκτιτ' σιδηρομήτορα. (*d*) Relate the story on which this drama is founded, and remark on the poet's treatment of the same.

(C) GREEK PROSE COMPOSITION.

6. Translate into Greek:—(*a*) He came to the village in which were many people. (*b*) He said the deed was mine, not yours. (*c*) Theramenes was chosen ambassador to Sparta, with nine others. (*d*) I think you would like to hear why this happened. (*e*) The general forbade his soldiers to attack the enemy.

SECOND YEAR SUPPLEMENTAL.

LATIN.

TUESDAY, SEPTEMBER, 15TH:—AFTERNOON, 2 TO 5.

Examiner..... A. JUDSON EATON, M.A., PH.D.

1. Translate and carefully explain the grammatical construction of *italicized* words:—

(*a*) Ut vero Hannibal ipse, dum murum incautius *subit*, adversum *femur* tragula graviter ictus cecidit, tanta circa fuga ac trepidatio fuit, ut non multum abesset, quin opera ac vineae *desererentur*. Obsidio deinde per paucos dies magis quam oppugnatio fuit, dum vulnus ducis *curaretur;* per quod tempus ut quies certaminum erat, ita ab apparatu operum ac munitionum *nihil* cessatum. Itaque acrius de integro coortum est bellum, pluribusque *partibus*, vix accipientibus quibusdam opera locis, vineae coeptae *agi* admoverique aries.

(*b*) Sub idem fere tempus et legati, qui redierant ab Carthagine, *Romam* rettulerunt, omnia hostilia esse, et Sagunti excidium nuntiatum est; tantusque simul maeror patres misericordiaque *sociorum peremptorum* indigne et pudor non lati

auxilii et ira in Carthaginienses metusque de summa rerum cepit, velut si iam ad portas hostis *esset*, ut tot uno tempore motibus animi turbati trepidarent magis quam consulerent: nam neque hostem acriorem bellicosioremque secum congressum nec rem Romanam tam desidem unquam fuisse atque imbellem.

2. Without translating, give a brief explanation of any peculiarities of construction or expression:—

(*a*) Odiis etiam prope maioribus certarunt quam viribus, Romanis indignantibus, quod victoribus victi ultro inferrent arma, Poenis quod superbe avareque *crederent imperitatum* victis esse.

(*b*) Vestitus nihil inter aequales excellens.

(*c*) Centum milia fuere, invicta acies, si aequo dimicaretur campo.

(*d*) Phalarica erat Saguntinis missile telum hastili abiegno et cetera tereti praeterquam ad extremum.

(*e*) Nec hospitale quicquam pacatumve satis prius auditum, quam Massiliam venere.

(*f*) Hospitem enim se Galliae, non hostem advenisse.

(*g*) Quicquid adiecissent ipsi terroris, satis ad perniciem fore rati sunt.

3. Give the geographical position of *Aegates*, *Insulae*, *Saguntum*, *Placentia*, *Liguria*, *Massilia*, *Gades*. Write a brief note on the last named.

4. (*a*) Name the principal writers of history in the third period of Roman Literature, with enumeration of their extant works. (*b*) Give a short account of Livy's life and writings, his aim in writing history, the defects and excellencies of his work.

5. Translate:—

(A) "O Cives, cives, quaerenda pecunia primum est,
virtus post nummos." Haec Ianus summus ab imo
prodocet, haec recinunt iuvenes dictata senesque,
laevo suspensi loculos tabulamque lacerto.
Est animus tibi, sunt mores et lingua fidesque,
sed quadringentis sex septem milia desunt:
plebs eris.

(B) Invidus alterius macrescit rebus opimis;
invidia Siculi non invenere tyranni
maius tormentum. Qui non moderabitur irae,
infectum volet esse dolor quod suaserit et mens,
dum poenas odio per vim festinat inulto.

(C) Hunc solem et stellas et decedentia certis
tempora momentis sunt qui formidine nulla
imbuti spectent. Quid censes munera terrae,
quid maris extremos Arabas ditantis et Indos,
ludicra quid plausus et amici dona Quiritis,
quo spectanda modo, quo sensu credis et ore?

6. (Ext. A.) (1) How is this passage connected in thought with the preceding lines of the context? (2) Remark on the phrases *Ianus summus ab imo, prodocet, suspensi loculos.* (3) Explain (in Latin terms, if possible) the meaning of *animus, mores, lingua, fides.* (4) Comment on *sed quadringentis..... desunt.*

7. (Exts. B. and C.) (1) Give the derivation of *macrescit, momentis, ditantis.* (2) Scan the first line of Ext. (B) and the last line of Ext. (C), remarking on any peculiarities. (3) Account for the grammatical construction of *rebus opimis, irae, odio, munera, maris, plausus.*

8. Write a brief sketch of Horace's life. Remark on the style of his epistles, and the questions discussed in them.

9. Translate into Latin:—

(a) War was not yet openly declared, but there were already grounds for it. The Saguntines saw that they were threatened with immediate danger, and despatched ambassadors to Rome, imploring assistance. The matter was brought before the Senate, in the consulship of Publius Scipio and Tiberius Longus, 219 B.C., and it was decided to send ambassadors into Spain with instructions to investigate the condition of their allies, and if they saw sufficient reason to warn Hannibal not to meddle with the Saguntines as being allies of Rome.

(b) Although Hannibal now went away for a while, the siege was not neglected, for Maharbal conducted the campaign so vigorously that no one felt the general's absence; and when he did return, nothing prevented his leading his army straight through the city to the citadel.

FIRST YEAR EXHIBITIONS.

GREEK.

TUESDAY, SEPTEMBER 15TH :—MORNING, 9 TO 12.

Examiner,..... .....A. JUDSON EATON, M.A., PH.D.

NOTE :—Candidates may substitute (B) 1 of the First Year Entrance Paper for (A) 1, III. of the Second Year Entrance for (B) 2, and II of the same paper for (C) 3.

(A) XENOPHON, ANABASIS, Bk. V.

1. Translate :—

Ταύτῃ μὲν τῇ ἡμέρᾳ τοῦτο τὸ τέλος ἐγένετο. τῇ δὲ ὑστεραίᾳ συνελεξαν οἱ στρατηγοὶ τοὺς στρατιώτας. καὶ ἐδόκει αὐτοῖς περὶ τῆς λοιπῆς πορείας παρακαλέσαντας τοὺς Σινωπέας βουλεύεσθαι. εἴτε γὰρ πεζῇ δέοι πορεύεσθαι, χρήσιμοι ἂν ἐδόκουν εἶναι οἱ Σινωπεῖς· ἔμπειροι γὰρ ἦσαν τῆς Παφλαγονίας· εἴτε κατὰ θάλατταν, προσδεῖν ἐδόκει Σινωπέων· μόνοι γὰρ ἂν ἐδόκουν ἱκανοὶ εἶναι πλοῖα παρασχεῖν ἀρκοῦντα τῇ στρατιᾷ. καλέσαντες οὖν τοὺς πρέσβεις συνεβουλεύοντο, καὶ ἠξίουν Ἕλληνας ὄντας Ἕλλησι τούτῳ πρῶτον καλῶς δέχεσθαι τῷ εὔνους τε εἶναι καὶ τὰ βέλτιστα συμβουλεύειν.

Ἀναστὰς δὲ Ἑκατώνυμος πρῶτον μὲν ἀπελογήσατο περὶ οὗ εἶπεν ὡς τὸν Παφλαγόνα φίλον ποιήσοιντο, ὅτι οὐχ ὡς τοῖς Ἕλλησι πολεμησόντων σφῶν εἴποι, ἀλλ' ὅτι ἐξὸν τοῖς βαρβάροις φίλους εἶναι τοὺς Ἕλληνας αἱρήσονται. ἐπεὶ δὲ συμβουλεύειν ἐκελευον, ἐπευξάμενος εἶπεν ὧδε.

(*a*) Account for the optatives δέοι, ποιήσοιντο, εἴποι, and the construction of ἄν ἐδόκουν, ἐξόν. (*b*) Explain clearly the grammatical construction of the sentence καὶ ἠξίουν.....συμβουλεύειν, and especially of Ἕλλησι and τῷ.

(B) HOMER, ILIAD IV.

2. Translate:—

Ὡς ἔφαθ', αἱ δ' ἐπέμυξαν Ἀθηναίη τε καὶ Ἥρη.
Πλησίαι αἵ γ' ἥσθην, κακὰ δὲ Τρώεσσι μεδέσθην.
Ἦτοι Ἀθηναίη ἀκέων ἦν οὐδέ τι εἶπεν,
Σκυζομένη Διΐ πατρὶ, χόλος δέ μιν ἄγριος ἦρει·
Ἥρῃ δ' οὐκ ἔχαδε στῆθος χόλον, ἀλλὰ προσηύδα·
"Αἰνότατε Κρονίδη, ποιον τὸν μῦθον ἐειπες.
Πῶς ἐθελεις ἄλιον θεῖναι πόνον ἠδ' ἀτέλεστον
Ἰδρῶ θ' ὃν ἵδρωσα μόγῳ, καμέτην δέ μοι ἵπποι
Λαὸν ἀγειρούσῃ, Πριάμῳ κακὰ τοῖό τε παισίν.
Ἔρδ'· ἀτὰρ οὔ τοι πάντες ἐπαινέομεν θεοὶ ἄλλοι."

Ὦ υἱὲ Πετεῶο διοτρεφέος βασιλῆος.
Καὶ σὺ, κακοῖσι δόλοισι κεκασμένε, κερδαλεόφρον,
Τίπτε καταπτώσσοντες ἀφέστατε, μίμνετε δ' ἄλλους;
Σφῶϊν μέν τ' ἐπέοικε μετὰ πρώτοισιν ἐόντας
Ἑστάμιν ἠδὲ μάχης καυστειρῆς ἀντιβολῆσαι·
Πρώτω γὰρ καὶ δαιτὸς ἀκουαζεσθον ἐμεῖο,
Ὁππότε δαῖτα γέρουσιν ἐφοπλιζωμεν Ἀχαιοί.
Ενθα φίλ' ὀπταλέα κρέα ἔδμεναι ἠδὲ κύπελλα
Νῦν δὲ φίλως χ' ὁρόφτε καὶ εἰ δέκα πύργοι Ἀχαιῶν
Τμείων προπάροιθε μαχοίατο νηλεῖ χαλκῷ."

(*a*) Write the Attic forms of μιν, κ-μέτην, τοῖο, ἐπαινέομεν, ἐμεῖο, ἔδμεναι. (*b*) Inflect ἥσθην in the tense in which it is found. (*c*) Give the principal parts of ἦρει. (*d*) Explain the form and mood of: ὁρόφτε, μαχοίατο. (*e*) Scan the first two lines of extract (*b*). (*f*) Translate the heading of the Fourth Book—*ὁρκίων σύγχυσιν. Αγαμέμνονος ἐπιπώλησις*—and give an outline of the story as contained in the Third and Fourth books of the Iliad.

(C) HOMER, ODYSSEY VII.

3. Translate :—

„'Αλκίνο', οὐ μέν τοι τόδε κάλλιον· οὐδὲ ἔοικεν,
ξεῖνον μὲν χαμαὶ ἧσθαι ἐπ' ἐσχάρη ἐν κονίῃσιν·
οἵδε δὲ σὸν μῦθον ποτιδέγμενοι ἰσχανόωνται.
ἀλλ ἄγε δὴ ξεῖνον μὲν ἐπὶ θρόνου ἀργυροήλου
εἶσον ἀναστήσας, σὺ δὲ κηρύκεσσι κελευσον
οἶνον ἐπικρῆσαι, ἵνα καὶ Διὶ τερπικεραύνῳ
σπείσομεν, ὅσθ' ἱκέτῃσιν ἅμ' αἰδοίοισιν ὀπηδεῖ·
δόρπον δε ξείνῳ ταμίη δότω ἔνδον ἐόντων."

Τὸν δ' αὖτ 'Αλκίνοος ἀπαμειβετο φώνησέν τε
, ξεῖν' οὔ μοι τοιοῦτον ἐνὶ στήθεσσι φίλον κῆρ
μαψιδίως κεχολῶσθαι· ἀμείνω δ' αἴσιμα κάντα, 310
αἲ γάρ, Ζεῦ τε πάτερ καὶ 'Αθηναίη καὶ Ἄπολλον,
τοῖος ἐὼν οἷός ἐσσι, τά τε φρονέων ἅτ' ἐγώ περ,
παῖδά τ' ἐμὴν ἐχέμεν καὶ ἐμὸς γαμβρὸς καλέεσθαι
αὖθι μένων· οἶκον δέ τ' ἐγὼ καὶ κτήματα δοίην,
εἴ κ ἐθέλων γε μένοις· ἀέκοντα δέ σ' οὔτις ἐρύξει 315
Φαιήκων· μὴ τοῦτο φίλον Διὶ πατρὶ γένοιτο.
πομπὴν δ' ἐς τόδ' ἐγὼ τεκμαίρομαι, ὄφρ' εὖ εἰδῇς,
αὔριον ἔς τῆμος δὲ σὺ μὲν δεδμημένος ὕπνῳ
λέξεαι, οἱ δ' ἐλόωσι γαλήνην, ὄφρ' ἂν ἵκηαι
πατρίδα σὴν καὶ δῶμα, καὶ εἴ πού τοι φίλον ἐστὶν, 320
εἴπερ καὶ μάλα πολλὸν ἑκαστερω ἔστ' Εὐβοίης,
τήνπερ τηλοτάτω φάσ' ἔμμεναι οἵ μιν ἴδοντο
λαῶν ἡμετέρων, ὅτε τε ξανθὸν Ῥαδάμανθυν
ἦγον ἐποψόμενον Τιτυὸν, Γαιήϊον υἱόν.
καὶ μὲν οἱ ἔνθ' ἦλθον, καὶ ἄτερ καμάτοιο τέλεσσαν 325
ἤματι τῷ αὐτῷ καὶ ἀπήνυσαν οἶκαδ' ὀπίσσω.
εἰδήσεις δὲ καὶ αὐτὸς ἐνὶ φρεσὶν ὅσσον ἄριστοι
νῆες ἐμαὶ καὶ κοῦροι ἀναρρίπτειν ἅλα πηδῷ."

(*a*) What are the Attic forms for *ἐων, ἐσσι, ἐχεμεν, ἰσχανόωνται*? Show how the Attic and Homeric forms are related. (*b*) Explain the following constructions: *κεχολῶσθαι* (v. 310), *ἐποψόμενον* (324), *δοίην* (314), *μὴ γένοιτο* (316). (*c*) Scan lines 311 and 319 Define the terms *thesis, arsis, ictus.* What are *spondaic verses*? How frequently are they found in Homer? Do they occur in Virgil?

FIRST YEAR EXHIBITIONS.

LATIN.

TUESDAY, SEPTEMBER 15TH :—AFTERNOON, 2 TO 5.

Examiner,.....A. JUDSON EATON, M.A., PH. D.

Note.—Virgil, Aeneid, Bk. I. (First Year entrance paper) may be substituted for Aeneid Bk. II.; Caesar, Bell Gall. I. and II. for V. and VI.; and Cicero, In Catilinam, I. and II. (Second Year entrance) for Horace, Odes, Bks. III. and IV.

(A.) CAESAR, GALLIC WAR, BKS. V. AND VI.

1. Translate:

(*a*) Britanniae pars interior *ab iis* incolitur, quos natos in insula ipsi memoria proditum dicunt; maritima pars ab iis qui praedae ac belli inferendi causa ex Belgio transierant, *qui omnes* fere iis nominibus civitatum appellantur *quibus* orti ex civitatibus eo pervenerunt, et *bello* illato ibi permanserunt atque agros *colere* coeperunt. Hominum est infinita multitudo creberrimaque aedificia, fere *Gallicis* consimilia; pecorum magnus numerus. Utuntur aut *aere*, aut taleis ferreis ad certum pondus examinatis pro nummo. Nascitur ibi plumbum album in mediterraneis regionibus, in maritimis ferrum, sed eius exigua est copia; aere utuntur importato.

(*b*) Sunt item quae appellantur alces. Harum est consimilis capreis figura et varietas pellium; sed magnitudine paullo antecedunt mutilaeque sunt *cornibus*, et crura sine nodis articulisque habent; neque quietis causa procumbunt, neque, si quo afflictae casu considerunt, erigere sese aut sublevare pos-

sunt. His sunt arbores pro cubilibus; ad eas se applicant, atque ita paullum modo reclinatae quietem capiunt; quarum ex vestigiis cum est animadversum a venatoribus quo se recipere consuerint, omnes eo loco aut ab radicibus subruunt aut accidunt arbores tantum ut summa species earum stantium relinquatur. Huc cum se consuetudine reclinaverunt, infirmas arbores pondere affligunt atque una ipsae concidunt.

2. Explain carefully the grammatical construction of words and phrases italicized in the above extracts.

(B.) VIRGIL, AENEID, BK. II.

3. Translate:

(*a*) "His lacrimis vitam damus, et miserescimus ultro.
Ipse viro primus manicas atque arta levari
vincla iubet Priamus, dictisque ita fatur amicis:
'Quisquis es, amissos hinc iam obliviscere Graios.
noster eris; mihique haec edissere vera roganti.
Quo molem hanc immanis equi statuere? quis auctor?
quidve petunt? quae religio? aut quae machina belli
dixerat. Ille dolis instructus et arte Pelasga
sustulit exutas vinclis ad sidera palmas:
'Vos aeterni ignes, et non violabile vestrum
testor numen,' ait; 'vos arae ensesque nefandi,
quos fugi, vittaeque deum, quas hostia gessi.

(*b*) Dividimus muros et moenia pandimus urbis;
accingunt omnes operi, pedibusque rotarum
subiciunt lapsus, et stuppea vincula collo
intendunt. Scandit fatalis machina muros,
feta armis: pueri circum innuptaeque puellae
sacra canunt, funemque manu contingere gaudent.
Illa subit, mediaeque minans illabitur urbi.
O patria, o divum domus Ilium, et inclyta bello
moenia Dardanidum! quater ipso in limine portae
substitit, atque utero sonitum quater arma dedere.

4. Derive *manicas*, *vincla*, *numen*. Explain the expression *lapsus rotarum*. What case is *pedibus*, and why?

5. To what class or classes of verbs do *fatur*, *obliviscere*, *miseresco*, and *gaudent*, belong? Give the principal tenses of *dividimus*, *canunt*, *contingere* and *sustulit*.

6. Give the gender and declension of *dies*, *sidera*, *lex*, *nex* and *luctus*.

(C.) HORACE, ODES, BKS. III. AND IV.

7. Translate: (*a*) Bk. III. Ode XXV. (*b*) Bk. IV., Ode III.

8. Describe the metres in which these two Odes are written.

9. (*a*) Account for the construction of *nemora, antris, inserere* (Ode XXV.) (*b*) *Hebrum, Rhodopen.* Give the geographical position of each.

10. (*a*) Remark on the following: *Isthmius* (Ode III), *curru Achaico, Melpomene, Pieri.* (*c*) How do you explain the use of the subjunctive *contuderit* (line 8) ?

FIRST YEAR EXHIBITIONS.

GENERAL PAPER AND COMPOSITION.

FRIDAY, SEPT. 18TH:—2 TO 5 P.M.

Examiner,..... FRANK CARTER, M.A.

1. State the usages of dum, quin, ὥστε, πρίν; distinguish between ὅτε and ἐπειδή.

2. Give English Philological equivalents to ἡδύς, ὁμός ἀμῶς, τέρσομαι, κύων; and Latin Philological equivalents to ἵππος, γένους. ἔθηκα, ἤδεα. Give the laws of change involved in each case. Explain the apparent differences in formation between χάριν and ἐλπίδα, and between ἀληθῆ and ἡδέα. Does this throw any light on the conjugation of dissyllables in—έω ?

3. What is the meaning of the terms *zeugma, syllepsis, hendiadys, predicative position, prolepsis ?* Give examples in Greek, Latin and English.

4. (*a*) Describe the various ways of expressing purpose in Latin. How many of these are possible in Greek ?

(*b*) State the chief differences between the Greek and Latin infinitives.

(*c*) What is the Greek equivalent to the Latin Ablative Absolute? Why is it less used than the Ablative Absolute?

5. Give the chief forms used in Attic Prose of the verbs meaning 'come,' 'seize,' 'speak,' 'strike.' Give alternatives where they exist, mentioning any differences in meaning or usage.

6. Distinguish, in meaning or usage, *ἄναξ*, *βασιλεύς*, *τύραννος*; rex, princeps; *νοῦς*, *φρήν*, *διάνοια*, *θυμός* *ψυχή*; urbs, civitas, municipium, oppidum; populus, plebs; *δῆμος*, *πλῆθος*, *ὄχλος*; *ἀστοί*, *πολῖται*; *θέλω*, *ἐθέλω*, *βούλομαι*.

7. Translate into Greek :—

(1) He said he would not come unless he were wanted.

(2) As soon as he saw his brother, he killed him.

(3) Whenever he saw his mother, he gave her all he had.

(4) If a man has large feet, he is considered somewhat lacking in beauty, but is just as well able to walk.

(5) If I had been present, you would not have escaped with impunity.

(6) What induces you to talk such nonsense?

8. Translate into Latin: What is it that prevents many people from making progress in learning? I myself believe the real reason to be that as men grow older they increasingly desire to grow rich rather than wise. And the result of this is that in Rome at the present day there is too much wealth and too little knowledge, so that, even in making friendships, some men consider how much benefit

they will themselves gain. But a wise man should remember how much pleasure there is enjoying intimacy with one who is really worthy of the name of friend.

FIRST YEAR EXHIBITIONS.

GEOMETRY.

WEDNESDAY, SEPT. 16TH :—MORNING, 9 to 12.

Examiners,..... { G. H. CHANDLER, M.A. H. M. TORY, M.A.

Answers to parts A and B must be written in separate answer books.

A

1. If the squares on two sides of a triangle are together equal to the square on the third side, the triangle is right-angled.

2. Divide a straight line into two parts so that the rectangle contained by the whole and one of the parts may be equal to the square on the other part.

(*a*) If on the given line there be described a rectangle equal to that contained by the two parts, show that the height of the rectangle will be equal to the difference of the parts.

3. The angle in a semi-circle is a right angle; that in a segment greater than a semi-circle is less than a right angle; and that in a segment less than a semi-circle is greater than a right angle.

(*a*) Circles are described on two sides of a triangle as diameters; show that they intersect on the third side.

4. Describe a circle about a regular pentagon.

*5. Equal triangles which have one angle of the one equal to one angle of the other have their sides about the equal angles reciprocally proportional.

B

6. The angles in the same segment of a circle are equal. (*a*) If AB and AC be two tangents drawn from the point A to a circle, and D any point on the circumference outside of the triangle ABC, show that the sum of the angles ABD and ACD is constant.

7. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line between the points of section.

* Extra questions.

8. From the extremities of the base of an isosceles triangle straight lines are drawn perpendicular to the sides; show that the angles made by them with the base are each equal to half the vertical angle.

*9. If the vertical angle of a triangle be bisected by a straight line which cuts the base, the segments of the base shall have the same ratio which the other sides of the triangle have to one another.

10. To find a mean proportional between two given straight lines.

FIRST YEAR EXHIBITIONS.

ALGEBRA AND ARITHMETIC.

WEDNESDAY, SEPTEMBER 16TH :—AFTERNOON, 2 TO 5.

Examiners,..... { G. H. CHANDLER, M.A.
H. M. TORY, M.A.

Answers to parts A and B must be written in separate answer books.

A.

1. Show that

$$\frac{x^2-bc}{(a-b)\,(a-c)} + \frac{x^2-ca}{(b-c)\,(b-a)} + \frac{x^2-ab}{(c-a)\,(c-b)} = -1,$$

and that

$$\frac{7+3\sqrt{5}}{7-3\sqrt{5}} + \frac{7-3\sqrt{5}}{7+3\sqrt{5}} = 47.$$

2. Solve the quadratic equation $a x^2 + b x + c = o$, and show (1) that the sum of the roots $= -\frac{b}{a}$, and (2) that their product $= \frac{c}{a}$.

3. Find the sum of n terms of the series $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}$, etc., and hence the limit of the sum as the number of terms approaches infinity.

4. A man bought a horse, a wagon and a harness for $189, paying for the horse $\frac{8}{3}$ as much as for the wagon, and for the harness $\frac{1}{5}$ as much as for the horse. Find, by arithmetic, the cost of each.

5. A rectangular block of stone measures 3 by 4 by 5 feet. Find the distance between opposite corners.

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* Extra question.

B.

6. If the arithmetic mean between a and b is twice as great as the geometric mean, shew that $\frac{a}{b} = \frac{2+\sqrt{3}}{2-\sqrt{3}}$

7. Solve the equations

(1) $x^3 + y^3 = 65$; $x + y = 5$

(2) $\frac{x}{a} + \frac{y}{b} = 3$; $\frac{y}{b} + \frac{z}{c} = 5$; $\frac{z}{a} + \frac{x}{c} = 6$

(3) $\sqrt{x+14} + \sqrt{x-4} = 14$

8. A sum of money was divided between A and B, so that the share of A was to that of B as 5 to 3; also the share of A exceeded five-ninths of the whole sum by $50; what was the share of each person?

9. Find the interest on $5,764 for 5 months at 6 per cent.

10. If 8,000 metres be equal to 5 miles, and if a cubic fathom of water weigh six tons and a cubic meter of water 1,000 kilograms, find the ratio of a kilogram to a pound avoirdupois (1 ton = 2240 lbs.).

HIGHER ENTRANCE EXAMINATIONS, 1896.

FIRST YEAR.

SHAKSPERE: *Macbeth.*

THURSDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiners, { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

1. Narrate the events contained in *either* Act IV. or Act V.; quote from the play any passage not less than ten lines in length, deserving notice for strength or beauty of expression, and justify your selection.

2. Make some notes on Shakspere's use of the marvellous or supernatural in this drama.

3. Give your opinion of Lady Macbeth's character and part in this drama.

4. Explain the following words and expressions: memorize another Golgotha; sleep shall neither night nor day hang upon his pent-house lid ; if the assassination could *trammel* up the consequence; ere human statute purged the gentle weal; thou *lily-liver'd* boy.

5. Scan any five lines from the extract given in answer to question (1); and note any peculiarities of scansion.

N.B.—The essay subjects are identical with those assigned for the ordinary entrance examination.

CONCOURS POUR LES BOURSES ET PRIX DE PREMIÈRE ANNÉE.

LE 18 SEPTEMBRE, DE 9 HRES À MIDI.

Examinateurs..... { M. INGRES. J. L. MORIN.

1. Indiquez trois cas, avec des exemples à l'appui, où l'article est employé en français et supprimé en anglais, et *vice versa*.

2. (*a*) Quels sont les verbes auxiliaires en français ? (*b*) Donnez-en les temps primitifs. (*c*) Avec quelles classes de verbes les emploie-t-on chacun ? Citez des exemples.

3. Donnez des exemples en français pour montrer le changement de sens de certains verbes occasionné par le changement d'auxiliaire.

4. Devant quelles voyelles les verbes en *cer* prennent-ils la cédille, et pourquoi ?

5. Remplacez les tirets par des mots convenant au sens :

Certains enfants tuent — mouches, arrachent — — aux oiseaux, tourmentent — — , sous prétexte — — sont — simples animaux. — barbarie — la marque d'un — cœur.

Un — empereurs romains les — cruels, Domitien, s'amusait, au temps — — enfance, à percer des mouches — un poinçon ; plus — le spectacle favori — monarque était — faire jeter, dans — cirque, — chrétiens — bêtes — .

6. Traduisez en français :—

A rich merchant having died, two men came forward, each pretending to be his only son and heir. As the judges of Damascus could not agree as to which of the two was the legitimate heir, they referred the case to Solomon.

The king, having sent for the two young men, told them that the inheritance would fall to the lot of him who could break the coffin of his father.

A hammer was given to each of them, and having approached the coffin one of them began to strike it.

But the other exclaimed that rather than break his father's bier, he would renounce the inheritance.

"No, it shall be thine," said Solomon; "thy respect for thy father's memory proves that thou art his son."

7. Remplacez les infinitifs par les formes qu'exige le sens:

LE ROI ET LE PAYSAN.

Henri IV (être) à la chasse et (écarter) de sa suite (rencontrer) un paysan (asseoir) au pied d'un arbre sur le bord de la route.

"Que (faire) tu là, lui (dire) Henri IV? Je (attendre) pour voir passer le roi.

"Si tu (vouloir) monter derrière moi, (ajouter) Henri, je te (conduire) dans un endroit où tu (pouvoir) le voir tout à ton aise."

Le paysan (monter), et chemin faisant (demander) comment il (pouvoir) reconnaître le roi.

"Tu ne (avoir) qu'à regarder celui qui (garder) son chapeau pendant que tous les autres (avoir) la tête nue."

Henri (rejoindre) la chasse et tous les seigneurs le (saluer).

"Eh bien!" lui (dire) le paysan, "où (être) le roi?"

"Ma foi, mon ami, il (falloir) que ce (être) toi ou moi, (répondre) le roi, car il n'y (avoir) que nous deux qui (avoir) le chapeau sur la tête."

SECOND YEAR EXHIBITIONS.

GREEK.

TUESDAY, SEPT. 15TH:—MORNING, 9 TO 12.

Examiner,.....A. JUDSON EATON, M.A., PH.D.

1. Translate: Xenophon, Hellenics, Bk. I., chap. 7, §§ 16-19, inclusive.

(*a*) Supply the ellipses after ὅτι ἔπεισαν, and before ὅτι ἐπέταξαν and ὅθεν μάλιστα. (*b*) In what respects were the trial and execution of the generals unconstitutional?

2. Translate: Xenophon, Hellenics, Bk. II., chap. 4, §§ 10-12, inclusive.

(*a*) Comment on the character of Callicratidas, as contrasted with that of Lysander. (*b*) Translate and explain the following military or naval terms:—(1) *θέσθαι τὰ ὅπλα.* (2) *συμφράξαντες.* (3) *ἐπειδὴ ὥρμίσαντο.* (4) *οἱ ἐπιβάται.* (5) *δύο λόχοι βοηθήσαντες.* (6) *τὰ παραῤῥύματα παραβάλων.* (7) *ἐπί μιᾶς τεταγμένοι.* (8) *ἵνα μὴ διέκπλουν διδοῖεν.* (9) *κατὰ πόδας πλέντες.* (10) *παρετάξαντο ἐν μετώπῳ.* (11) *ἡ Πάραλος.*

3. Translate: Demosthenes, Olynthiacs, I., §§ 19 and 20: *καὶ περὶ μὲν.....τῶν πράγματων.* (*a*) When is *ἐστί* accented on the penult? (*b*) Upon what do *εἶναι* and *λαμβάνειν* (*εἰς τὰς ἑορτάς*) depend? What other reading occurs for the latter? (*c*) Is there any distinction made in usage between *οἶμαι* and *οἴομαι*? (*d*) Explain case of *τῶν πραγμάτων.* (*e*) Define the term *εἰσφορά.* (*f*) *σὺ γράφεις κ. τ. λ.*: why was Demosthenes unwilling to make such a motion? (*g*) What was the *theoric fund*?

4. Translate: Demosthenes, Olynthiacs, II., §§ 6 and 7: *ἐγὼ γὰρ..... ἀναδέξασθαι.* (*a*) Distinguish in meaning *θεωρῶν* and *σκοπῶν.* (*b*) Explain the grammatical construction of *εὐηθειαν.....φάσκειν... κατασκενάσαι...προσαγαγόμενον.* (*c*) Explain the references to the Olynthians, Amphipolis, Potidaea, Thessalia, Magnesia, and the Phocian war. Give dates, when possible. (*d*) State accurately (or draw the coast line and mark) the geographical position of the following terms: Amphipolis, Torone, Olynthus, Potidaea, Pydna.

5. Translate: Euripides, Alcestis, (*a*) vss. 420-434; 569-587.

ΑΔ. *ἐπίσταμαί γε κοὐκ ἄφνω κακὸν τόδε* 420
προσέπτατ'· εἰδὼς δ' αὖτ' ἐτειρόμην πάλαι.

ἀλλ', ἐκφορὰν γὰρ τοῦδε θήσομαι νεκροῦ,
πάρεστε καὶ μένοντες ἀντηχήσατε
παιᾶνα τῷ κάτωθεν ἀσπόνδῳ θεῷ.
πᾶσιν δὲ Θεσσαλοῖσιν ὧν ἐγὼ κρατῶ
πένθους γυναικὸς τῆσδε κοινοῦσθαι λέγω
κουρᾷ ξυρήκει καὶ μελαμπέπλῳ στολῇ·
τέθριππά θ' οἳ ζεύγνυσθε καὶ μονάμπυκας
πώλους, σιδήρῳ τέμνετ' αὐχένων φόβην.
αὐλῶν δὲ μὴ κατ' ἄστυ, μὴ λύρας κτυπος
ἔστω σελήνας δώδεκ' ἐκπληρουμένας·
οὐ γάρ τιν' ἄλλον φίλτερον θάψω νεκρὸν
τοῦδ' οὐδ' ἀμείνον' εἰς ἔμ'· ἀξία δέ μοι
τιμᾶν, ἐπεὶ τέθνηκεν ἀντ' ἐμοῦ μόνη.

ΧΟ. Ὦ πολύξεινος καὶ ἐλεύθερος ἀνδρὸς ἀει ποτ' οἶκος, στρ. ά.
σέ τοι καὶ ὁ Πύθιος εὐλύρας Ἀπόλλων
ἠξίωσε ναίειν,
ἔτλα δὲ σοῖσι μηλονόμας
ἐν δόμοις γενέσθαι,
δοχμιᾶν διὰ κλιτυων
βοσκήμασι σοῖσι συρίζων
ποιμνίτας ὑμεναίους.
Σὺν δ' ἐποιμαίνοντο χαρᾷ μελέων βαλιαί τε λύγκες, ἀντ. ά.
ἔβα δὲ λιποῦσ' Ὄθρυος νάπαν λεόντων
ά δαφοινὸς ἴλα·
χόρευσε δ' ἀμφὶ σὰν κιθάραν,
Φοῖβε, ποικιλόθριξ
νεβρὸς ὑψικόμων πέραν
βαίνομσ' ἐλατᾶν σφυρῷ κούφῳ,
χαίρουσ' εὔφρονι μολπᾷ.

SECOND YEAR EXHIBITIONS.

GREEK PAPER AND COMPOSITION.

FRIDAY, SEPT. 18TH :— 2 TO 5 P.M.

Examiner,.....FRANK CARTER, M.A.

1. Discuss the pronouns se, ipse ; σφᾶς, ἑαυτούς, σφᾶς αὐτούς. Discuss the probability of ἑ and its derivative forms having originally had the sense of a "General Reflexive." Indicate the Philological identity between the Greek and Latin forms.

2. Draw up a scheme showing the correspondence of case-usages in Greek and Latin.

3. Discuss *either* (*a*) The Composition of the Iliad ;
or (*b*) The Style of Virgil.

4. Describe the judicial systems and legal processes of Athens and Rome, and discuss their merits in comparison with our own.

5. Give as complete a list as you can of the differences in Accidence and Syntax between Homeric and Attic Grammar, noting any points in which Homeric and Latin usage are alike and differ from Attic.

6. What do you know of the fiscal legislation of Solon and the Agrarian measures of the Gracchi ? Discuss the social effects of the corn-largesses at Rome. Was there anything at Athens which tended in the same direction ?

7. Explain the terms *anacrusis, catalexis, cyclic dactyl.* In what positions of the Homeric Hexameter is *hiatus* allowable, and why ? Discuss the modifications of Greek metres in the hands of Roman poets.

8. Translate into Greek :—

As soon as Phaedrus entered the room he saw that Glaucon was there with three others. He immediately asked him to whom he had sold his horse and for about how much. Glaucon replied "If I were a rich man, I should most willingly have given it for nothing. But as things are I was obliged to sell it to Chaerophon for ten dollars, and payment is to be made to-morrow, the 19th of Boedromion." Then Phaedrus said, "I wish, Glaucon, you had told us of your difficulties, so that we might have helped you. For it is monstrous that you should be compelled to sell a good young horse for so small a sum. That is a most ridiculous way of doing business."

9. Translate into Latin :—

(*a*) Hearing that the enemy were approaching, the Romans slowly advanced. When they had gone about a mile, the Roman general ordered a halt, and called together his men. He urged upon them the necessity of winning a decisive victory, in order to leave the enemy no hope of successfully renewing the rebellion at any future time. If the result of the battle should be in any way doubtful, there would still remain a danger of disturbance. But if the country were pacified in the only effective way, by the death or slavery of all the natives who had offered resistance, it would become for the future an integral part of the Roman empire.

(*b*). If I fail to obtain what I ask of you, that is to say, if some obstacle prevents you from granting it (for it is monstrous to imagine that you would refuse a request of mine), I may possibly be forced to expose myself to general criticism by narrating my own achievements, though I should only be following the example of many

distinguished men. There are, however, as you are well aware, certain inherent defects in autobiography ; a man is forced into undue modesty, where praise is due ; into omission, where his conduct deserves censure ; with the inevitable result that his work is less accepted and less influential.

(CICERO TO LUCCEIUS : FAM. 5, 12, 108.)

SECOND YEAR EXHIBITIONS.

LATIN.

TUESDAY, SEPTEMBER 15TH :—AFTERNOON, 2 TO 5.

Examiner..... A. JUDSON EATON, M.A., PH.D.

1. Translate, Virgil, Georgics, Bk. I. vss. 43-50; 466-475.

(*a*) Derive: Numen, solstitia, supercilium, iniquus, Indigetes, quadrigae. (*b*) How would you characterize the style of this poem ? At whose suggestion was it written, and what was the main object of the poet in composing it ?

2. Translate: Horace, Odes, Bk. I., Odes X. and XIV.

(*a*) Name the metre of each ode, and scan one stanza of each. (*b*) Explain the mythological allusions in *lyrae parentum, boves nisi reddidisses, Ilio-relicto, Thessalos ignes.*

3. Translate: Livy, Bk XXII., chap. 2, § 1-5 ; and chap. 50, §§ 4-6.

(*a*) Explain grammatical construction of: placandis dis, habendo dilectu, Arretium. *(b)* Where was Cannae ? Give the date and description of the battle fought there.

4. Translate (at sight):

Domuisti gentis immanitate barbaras multitudine innumerabilis, locis infinitas, omni copiarum genere abundantis: sed tamen ea vicisti, quae et naturam et condicionem ut vinci possent habebant; nulla est enim tanta vis quae non ferro et viribus debilitari frangique possit: animum vincere, iracundiam cohibere victoriam temperare, adversarium nobilitate, ingenio, virtute praestantem non modo extollere iacentem, sed etiam amplificare eius pristinam dignitatem, haec qui facit, non ego eum cum summis viris comparo, sed simillimum deo iudico. Itaque, C. Caesar, bellicae tuae laudes celebrabantur

illae quidem non solum nostris, sed paene omnium gentium litteris atque linguis, nec ulla unquam aetas de tuis laudibus conticescet: sed tamen eius modi res nescio quo modo etiam cum leguntur, obstrepi clamore militum videntur et tubarum sono: at vero cum aliquid clementer, mansuete, iuste, moderate, sapienter factum, in iracundia praesertim, quae est inimica consilio, et in victoria, quae natura insolens et superba est, audimus et legimus, quo studio incendimur, non modo in gestis rebus, sed etiam in fictis, ut eos saepe, quos numquam vidimus, diligamus ! te vero, quem praesertim intuemur, cuius mentem sensusque et os cernimus, ut, quicquid belli fortuna reliquum rei publicae fecerit, id esse salvum velis, quibus laudibus efferemus ? Quibus studiis prosequemur ? qua benevolentia complectemur ? parietes, medius fidius, ut mihi videtur, huius curiae tibi gratias agere gestiunt, quod brevi tempore futura sit illa auctoritas in his maiorum suorum et suis sedibus.

5. Translate (at sight):

Tempore crevit amor, qui nunc est summus, habendi:
Vix, ultra quo iam progrediatur, habet.
Pluris opes nunc sunt quam prisci temporis annis,
Dum populus pauper, dum nova Roma fuit;
Dum casa Martigenam capiebat parva Quirinum,
Et dabat exiguum fluminis ulva torum.
Iuppiter angusta vix totus stabat in aede:
Inque Iovis dextra fictile fulmen erat.
Frodibus ornabant, quae nunc Capitolia gemmis:
Pascebatque suas ipse senator oves.
Nec pudor in stipula placidam captare quietem
Et faenum capiti supposuisse fuit.
Iura dabat populis posito modo praetor aratro;
Et levis argenti lamina crimen erat.
At postquam fortuna loci caput extulit huius,
Et tetigit summo vertice Roma deos;
Creverunt et opes et opum furiosa cupido:
Et, cum possideant plurima, plura petunt.
Quaerere, ut absumant, absumpta requirere certant:
Atque ipsae vitiis sunt alimenta vices.
Sic, quibus intumuit suffusa venter ab unda,
Quo plus sunt potae, plus sitiuntur aquae.
In pretio pretium nunc est: dat census honores,
Census amicitias: pauper ubique iacet.

SECOND YEAR EXHIBITIONS.

EUCLID, ALGEBRA, TRIGONOMETRY.

WEDNESDAY, SEPT. 16TH :—MORNING, 9 to 12.

Examiners, ... { AELXANDER JOHNSON, M.A., LL.D. / REV. H. M. TORY, M.A.

Write the answers in separate books, marked A and B, respectively, to correspond to the questions.

A.

1. Inscribe a regular hexagon in a circle.

2. Prove that the duplicate ratio of two lines is the ratio of the squares described on them.

3. Find the first time after six o'clock when the two hands of a watch are directly opposite to one another.

4. Prove that a surd cannot be equal to the sum or difference of a rational quantity and a surd.

5. Prove :

$$\tan (A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

(*a*) If the sum of two angles be 45° and the tangent of one of them = $\frac{1}{5}$, find the tangent of the other angle.

6. Given $\sin A = \frac{1}{2}$, find the other trigonometrical ratios.

B.

7. In any right-angled triangle, any rectilineal figure described on the side subtending the right angle is equal to the similar and similarly described figures on the sides containing the right angle.

8. Describe an isosceles triangle, having each of the angles at the base double the vertical angle.

9. Simplify

(1) $\frac{x^2 + yz}{(x - y)(x - z)} + \frac{y^2 + xz}{(y - z)(y - x)} + \frac{x^2 + xy}{(z - x)(z - y}$

(2) $\frac{15 + 14\sqrt{3}}{15 - 2\sqrt{3}}$

10. Solve the equations :

(*a*) $x - y = 2,$
$x^3 - y^3 = 98.$

(*b*) $\frac{x+3}{x+2} \quad \frac{x-3}{x-2} = \frac{2x-3}{x-1}$

(*c*) $\sqrt{x} - \sqrt{x-8} = \frac{2}{\sqrt{x-8}}$

11. In any triangle

(1) $\sin \frac{A}{2} = \frac{\sqrt{(s-b)(s-c)}}{bc}$

(2) $\frac{a-b}{a+b} = \frac{\tan \frac{1}{2}(A-B)}{\tan \frac{1}{2}(A+B)}$

12. Find the area of a triangle whose sides are 942, 812, 1270 feet respectively. Prove the formula used.

SECOND YEAR EXHIBITIONS.

GEOMETRY.

WEDNESDAY, SEPTEMBER 16TH :—AFTERNOON, 2 to 5.

Examiners,..... { ALEXANDER JOHNSON, M.A., LL.D.
REV. H. M. TORY, M.A.

Write the answers in separate books, A and B.

A.

1. A common tangent to any two circles is divided harmonically by any other circle having the same radical axis with the two given circles.

2. Given a triangle, describe the circle with respect to which the triangle is self-conjugate.

3. Given two pairs of points in a straight line, find the locus of a point at which the angles subtended by each pair shall be equal.

4. Prove that the anharmonic ratio of four points on a circle is the same as the ratio of the rectangles under the opposite sides of the quadrilateral formed by joining the four points.

5. Given the base of a triangle, the sum of its sides, and the locus of its vertex a fixed straight line; construct the triangle.

6. If perpendiculars be drawn from any point on the circumference of a circle to two tangents, and their cord of contact, the square on the perpendicular to the chord is equal to the rectangle under the other two perpendiculars.

B.

7. If two triangles be on equal bases and between the same parallels, the two sides of each triangle intercept equal segments on any straight line parallel to the bases.

8. Inscribe in any triangle a parallelogram of given species.

9. The perpendiculars from the middle point of the base of a triangle on the bisectors of the internal and external vertical angles cut off from the two sides portions equal to half the sum or half the difference of the sides.

10. Any three straight lines drawn through the angles of a triangle, so as to intersect in the same point, divide the opposite sides into segments such that the segments of any side are in a ratio compounded of the ratios of the segments of the other two sides.

10. If two triangles be co-polar, they shall also be co-axial.

12. If two tangents be drawn to a circle, any third tangent will be cut harmonically by its point of contact, the two former tangents and their chord of contact.

SECOND YEAR EXHIBITIONS.

THEORY OF EQUATIONS—ALGEBRA.

MONDAY, SEPTEMBER 21ST :—MORNING, 9 TO 12.

Examiner,..... ALEX. JOHNSON, M.A., LL.D.
Assistant Examiner, ... H. M. TORY, M.A.

A.

1. Prove that every equation of an odd degree has at least one real root of a sign opposite to that of its last term.

2. The equation

$$3\ x^3 - 5\ x^2 - 4\ x + 20 = 0$$

has two roots whose difference = 3, find them.

3. Solve the equation

$$(1 + x)^4 = a\ (1 + x^4)$$

4. Find a superior limit to the positive roots of

$$4x^5 - 8x^4 + 22x^3 + 98x^2 - 73x + 5 = 0$$

proving any rule you may employ.

5. Find the sum of the series to n terms

$$1 + 5 + 13 + 29 + 61 + \text{etc.}$$

6. Out of 17 consonants and 5 vowels, how many words can be made having two consonants and one vowel in each?

B.

7. If each negative coefficient be taken positively and divided by the sum of all the positive coefficients which precede it, the greatest of all the fractions thus formed increased by unity is a superior limit of the positive roots.

8. Solve the equations

(1) $x^4 - 2x^3 + 3x^2 - 2x + 1 = 0$

(2) $x^3 + qx + r = 0$

9. Apply Sturm's theorem to show that the following equation has only one real root; and determine its position.

$$x^3 + 6x^2 + 10x - 1 = 0$$

10. Apply Homer's method to calculate the root of the equation $x - 2x^3 + 21x - 23 = 0$, which lies between 1 and 2.

11. Find the sum of the series

$$1 + \frac{4}{5} + \frac{7}{5^2} + \frac{10}{5^3} + \text{to } n \text{ terms.}$$

12. Prove that

$$a^x = 1 + x \log_\varepsilon a + \frac{x^2 (\log_\varepsilon a)^2}{\lfloor 2} + \frac{x^3 (\log_\varepsilon a)^3}{\lfloor 3}$$

ENGLISH GRAMMAR.

THURSDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiners,..... { CHAS E. MOYSE, B.A.
P. T. LAFLEUR, M.A.

1. State on what grounds you do or do not regard the article as a separate part of speech.

2. Classical words are far more numerous in English than Teutonic; why, then, is the English not a classical language? Classify the Teutonic languages.

3. Explain the forms spinster, vixen, feet, mathematics, first, twice.

4. Give the distributive and reflective adjective pronouns and explain the forms.

5. Give the third person singular of the nine primary tenses of the verb *strike* in the indicative mood, passive voice. Give an example of a strong verb which has become weak, and of a weak verb which has become strong.

6. Classify adverbs.

7. Write on the derivation of adverbs from nouns, adjectives and pronouns.

8. Notice changes which words passing from Latin through French into English have undergone.

9. Give examples of the various kinds of attributive adjunct.

10. Analyse and parse:

(a) We are not anxious about the future.

(b) England expects every man to do his duty.

(c) They urged us to remain.

Analyse: I will set this foot of mine as far as who goes farthest.

SECOND YEAR EXHIBITIONS.

ENGLISH GRAMMAR.

(Candidates will answer the questions of the Higher Entrance Examination, together with the following):

11. State the five periods of the historical development of English, and notice leading features of each.

12. Write on the use of shall, will, may, must, can, ought, thinks, and treat the verbs historically.

13. In what ways are compound prepositions made up ?

SECOND YEAR EXHIBITIONS.

ENGLISH LITERATURE.

MONDAY, SEPTEMBER 21ST :—AFTERNOON, 2 TO 5.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

(N.B.—Write the answers to A and B in different books, and your name on the outside of each).

A.

SHAKSPERE : *As You Like it.*

1. Is there any evidence to show that Shakspere in this play used the work of other writers for the whole or any part of the plot ?

2. Narrate the events contained in Act III. *or* in Act V., and quote where it may seem desirable.

3. Note the importance of Jaques and of Rosalind, as characters in this play.

4. From the text, select and explain: *(a)* four characteristics by Shaksperian words or expressions (*b*) three expressions that have passed into current or proverbial speech; *(c)* three expressions characteristic of, or indicating, the social position of the personages who use them.

B

TRENCH : *Study of Words.*

1. Trace the changes in the meaning of *sacrament, tribulation.* What is said about *salvator, calculation, library, classics?*

2. Show that titles of honour are liable "to be some lifted up and some cast down." (Two examples of each will suffice.) What general statement do *demoiselle* and *pope* substantiate? Use them in proof.

3. Write a few "comprehensive" words given by Trench. Derive *volcano, mausoleum, mithridate, gentian, hipocras, donat, vernicle, nicotine.* Give the meaning of the last four.

4. What does Trench say about pronunciation, when opposing phonetic spelling? Do you think his argument good? What is said of *savage* and *fancy?*

5. Show how proper names may be used to imply worthlessness or worth. (Take three examples of each kind.)

CONCOURS POUR LES BOURSES DE IIe ANNÉE.

LE 18 SEPTEMBRE:—DE 9 H. À MIDI.

Examinateurs,..... { M. INGRÈS. / J. L. MORIN.

1. Dites quel est le sens des verbes *convenir*, *échapper* et *expirer*, selon qu'ils sont construits avec l'auxiliaire *avoir* ou *être*.

2. (*a*) Dans quels cas les noms propres prennent-ils l'article? Donnez des exemples. (*b*) Indiquez les règles de la formation du pluriel des noms propres.

3. Donnez les règles qui se rapportent aux mots *aigle*, *amour*, *délice*, *gens*, *feu*, *nu*, *ci-joint*.

4. Dans quels cas les pronoms personnels sujets sont-ils placés après le verbe? Exemples.

5. Traduisez:

Le Berger et la Mer.

Du rapport d'un troupeau dont il vivait sans soins,
Se contenta longtemps un voisin d'Amphitrite.

Si sa fortune était petite
Elle était *sûre* (*a*) tout au moins.

A la fin, les trésors déchargés sur la *plage* (*b*)
Le tentèrent si bien qu'il *vendit* (*c*) son troupeau,
Trafiqua de l'argent, la mit entier sur l'eau.
Cet argent périt par naufrage.
Son maître fut réduit à garder les brebis,
Non plus berger en chef comme il était jadis,
Quand ses propres moutons *paissaient* (*d*) sur le rivage:
Celui qui s'était vu Coridon ou Tircis,
Fut Pierrot, et rien davantage.

LA FONTAINE, *Livre IV, Fable II.*

(*a*) Donnez deux homonymes de ce mot, et indiquez-en le sens ?

(*b*) Donnez deux synonymes de ce mot. (*c*) Expliquez l'emploi d passé défini de ce verbe.

(*d*) et l'imparfait de celui-ci.

6. Traduisez :

Cléante. Mon Dieu ! mon père, vous n'avez pas lieu de vous plaindre, et l'on sait que vous avez assez de bien.

Harpagon. Comment ! J'ai assez de bien ! Ceux qui le disent en ont menti. Il n'y a rien de plus faux ; et ce ne sont que des coquins qui font courir ces bruits-là. Cela est étrange, que mes propres enfants me trahissent, et deviennent mes ennemis.

Cléante. Est-ce être votre ennemi que de dire que vous avez du bien ?

Harpagon. Oui. De pareils discours et les dépenses que vous faites seront cause qu'un de ces jours on me viendra chez moi couper la gorge dans la pensée que je suis tout cousu de pistoles.

Cléante. Quelle grande dépense est-ce que je fais ?

Harpagon. Quelle ? Est-il rien de plus scandaleux que ce somptueux équipage que vous promenez par la ville ? Je querellais hier votre sœur ; mais c'est encore pis. Voilà qui crie vengeance au ciel ; et, à vous prendre depuis les pieds jusqu'à la tête, il y aurait là de quoi faire une bonne constitution. Je vous l'ai dit vingt fois, mon fils : toutes vos manières me déplaisent fort, vous donnez furieusement dans le marquis.

Molière, l'Avare, Ac. 1, *Sc. V.*

7. (*a*) Faites une courte analyse de *l'Avare*, (*b*) et une esquisse de la vie, de l'auteur.

Traduisez les expressions suivantes tirées de *l'Avare* :

(*a*) M'ouvrir à vous d'un secret.

(*b*) Qui se sent morveux, qu'il se mouche.

(*c*) Tout cousu de pistoles.

(*d*) Des cheveux de son crû qui ne coûtent rien.

(*e*) Lorsque l'on a que faire.

(*f*) Il en passera par tout ce que vous direz.

(*g*) Révérence parler.

(*h*) Leur épée de chevet.

(*i*) Tu as l'audace d'aller sur mes brisées !

(*j*) Je n'en demorderai point.

(*k*) Vous rendre partie contre lui.

SECOND YEAR EXHIBITIONS.

GERMAN.

TUESDAY, SEPT. 22ND :—MORNING, 9 TO 12.

Examiner,.....L. R. GREGOR, B.A., Ph.D.

1. Translate in *Kinder und Hausmaerchen, Aschenputtel.*

Nun ward..... heimtragen.

2. Translate in *Der Neffe als Onkel.*

(*a*) *Champagne.* Es thut mir leid. . . . schuldig sind.

(*b*) *Dorsigny.* Es ist ein rechter Jammer..... Stichen im Leibe.

3. Translate in *Der Gang nach dem Eisenhammer.*

Und froh..... bedienen.

4. *Eine Schüssel Linsen.* Explain the foregoing, and state fully the rules which govern number and case in expressions of quantity. Illustrate with well composed sentences.

5. Comment on the following: (*a*) allerorten, (*b*) einmál, (*c*) ein golden und silbern Kleid. (*d*) Dass Gott erbarm'. (*e*) stehenden Fusses. (*f*) Kann ich dafür ? (*g*) Die Pariser Damen.

6. Translate into German :—

Lormeuil. The two young ladies greeted me. Both of them behaved politely.

Colonel de Dorsigny. Politeness is not enough, your bride must also be pretty. My daughter wrote that she could be back at the earliest in six weeks.

Lormeuil. She is pretty, that I must say. Is it a general custom among Paris ladies not to be in the least astonished ?

Colonel de Dorsigny. When their husbands arrive they give them a delightful welcome.

Lormeuil. Your niece did not know what she was to make of me.

7. Translate into German :—

(*a*) While travelling in Europe, we met a great many Americans. (*b*) As a young man he went to London, became celebrated there, and died in the year 1616 in his native town. (*c*) This tree grows quickly ; it is at least four times as high as it was three years ago. (*d*) My sister is learning the song which was sung in the concert yesterday. (*e*) The students to whom these books belong do not study them diligently, which is a pity. (*f*) Glass is transparent, and we make windows of it.

8. In what circumstances are the three forms of declension of the adjective severally employed? Give one in full.

9. *Er sagte, dasz er es habe thun müssen.* Parse carefully the whole of the dependent clause in the foregoing.

10. *Oben bei dem Thron lag der König und die Königin.* Comment on the verb in the foregoing sentence. What about the concord of a verb with several subjects of different persons?

11. What comments of a general nature can you make on the conjugation of the several classes of verbs with double prefixes?

SECOND YEAR EXHIBITIONS.

CHEMISTRY.

THURSDAY, SEPTEMBER 17TH :—AFTERNOON, 2 TO 5.

Examiner,..... B. J. HARRINGTON, M.A., PH.D.

1. What weights of Zinc and Sulphuric Acid should be employed in order to obtain two liters of Hydrogen at 20°C. and 750 mm?

2. Explain the action of Ozone on Silver Oxide and on Hydrogen Dioxide.

3. What quantities of Sodium Nitrate and Sulphuric Acid should be sued to obtain 100 grams of Nitric Acid?

4. Give briefly the preparation and properties (*a*) of Nitrogen Pentoxide, and (*b*) of Methane.

5. Explain the value of specific heat determinations in ascertaining the atomic weights of elements.

6. How would you prepare green vitriol? Calculate the weight of crystals obtained by the slow oxidation of 115 tons of Pyrites containing 37.5 per cent. of sulphur.

7. What are the general characters of Potassium and Sodium salts?

8. Explain by means of graphic formulae the constitution of the Oxy-acids of Phosphorus.

9. Give the names and formulae of the Oxides of Lead and Manganese.

10. In what ways are crystals formed? Characterize briefly the different systems of crystallography.

CLASSICAL SCHOLARSHIPS.

SEPTEMBER.

PLATO, APOLOGY AND CRITO: XENOPHON, MEMORABILIA I: THUCYDIDES, VI.

Examiner,.....FRANK CARTER, M.A.

A. PLATO, APOLOGY AND CRITO, AND XENOPHON, MEMORABILIA, I.

1. Translate, with necessary notes:—

(*a*) 22 B-C. ὡς ἔπος γὰρ εἰπεῖν ὀλίγου αὐτῶν ἅπαντες οἱ παρόντες ἂν βέλτιον ἔλεγον περὶ ὧν αὐτοὶ ἐπεποιήκεσαν. ἔγνων οὖν καὶ περὶ τῶν ποιητῶν ἐν ὀλίγῳ τοῦτο, ὅτι οὐ σοφίᾳ ποιοῖεν, ἃ ποιοῖεν, ἀλλὰ φύσει τινὶ καὶ ἐνθουσιάζοντες, ὥσπερ οἱ θεομάντεις καὶ οἱ χρησμῳδοί· καὶ γὰρ οὗτοι λέγουσι μὲν πολλὰ καὶ καλά, ἴσασιν δὲ οὐδὲν ὧν λέγουσι.

(*b*) 30 E. ἐὰν γὰρ ἐμὲ ἀποκτείνητε, οὐ ῥᾳδίως ἄλλον τοιοῦτον εὑρήσετε, ἀτεχνῶς, εἰ καὶ γελοιότερον εἰπεῖν, προσ-

κείμενον τῇ πόλει ὑπὸ τοῦ θεοῦ, ὥσπερ ἵππῳ μεγάλῳ μὲν καὶ γενταίῳ, ὑπὸ μεγέθους δὲ νωθεστέρῳ καὶδεο μένῳ ἐγείρεσθαι ὑπὸ μύωπός τινος· οἷον δή μοι δοκεῖ ὁ θεὸς ἐμὲ τῇ πόλει προστεθεικέναι τοιοῦτόν τινα, ὃς ὑμᾶς ἐγείρων καὶ πείθων καὶ ὀνειδίζων ἕνα ἕκαστον, οὐδὲν παύομαι τὴν ἡμέραν ὅλην πανταχοῦ προσκαθίζων.

(*c*) 44 B. ἀλλ', ὦ δαιμόνιε Σώκρατες, ἔτι καὶ νῦν ἐμοὶ πείθου καὶ σώθητι· ὡς ἐμοί, ἐὰν σὺ ἀποθάνῃς, οὐ μία ξυμφορά ἐστιν, ἀλλὰ χωρὶς μὲν σοῦ ἐστερῆσθαι, τοιούτου ἐπιτηδείου, οἷον ἐγὼ οὐδένα μή ποτε εὑρήσω, ἔτι δὲ καὶ πολλοῖς δόξω, οἳ ἐμὲ καὶ σὲ μὴ σαφῶς ἴσασιν, ὡς οἷός τ' ὢν σε σῴζειν, εἰ ἤθελον ἀναλίσκειν χρήματα, ἀμελῆσαι.

(*d*) 50 E. καὶ εἰ τοῦθ' οὕτως ἔχει, ἆρ' ἐξ ἴσου οἴει εἶναι σοὶ τὸ δίκαιον καὶ ἡμῖν, καὶ ἅττ' ἂν ἡμεῖς σε ἐπιχειρῶμεν ποιεῖν, καὶ σοὶ ταῦτα ἀντιποιεῖν οἴει δίκαιον εἶναι; ἢ πρὸς μὲν ἄρα σοι τὸν πατέρα οὐκ ἐξ ἴσου ἦν τὸ δίκαιον καὶ πρὸς τὸν δεσπότην, εἴ σοι ὢν ἐτύγχανεν, ὥστε, ἅπερ πάσχοις, ταῦτα καὶ ἀντιποιεῖν,—οὔτε κακῶς ἀκούοντα ἀντιλέγειν οὔτε τυπτόμενον ἀντιτύπτειν οὔτε ἄλλα τοιαῦτα πολλά· πρὸς δὲ τὴν πατρίδα ἄρα καὶ τοὺς νόμους ἔσται σοι;

(*e*) 4, 6. Πρὸς δὲ τούτοις οὐ δοκεῖ σοι καὶ τόδε προνοίας ἔργον εἰκέναι, τὸ, ἐπεὶ ἀσθενὴς μέν ἐστιν ἡ ὄψις, βλεφάροις αὐτὴν θυρῶσαι, ἃ, ὅταν μὲν αὐτῇ χρῆσθαί τι δέῃ, ἀναπετάννυται, ἐν δὲ τῷ ὕπνῳ συγκλείεται; ὡς δ' ἂν μηδὲ ἄνεμοι βλάπτωσιν, ἡθμὸν βλεφαρίδας ἐμφῦσαι· ὀφρύσι τε ἀπογεισῶσαι τὰ ὑπὲρ τῶν ὀμμάτων, ὡς μηδ' ὁ ἐκ τῆς κεφαλῆς ἱδρὼς κακουργῇ· τὸ δὲ τὴν ἀκοὴν δέχεσθαι μὲν πάσας φωνὰς, ἐμπίπλασθαι δὲ μήποτε· καὶ τοὺς μὲν πρόσθεν ὀδόντας πᾶσι ξώοις οἵους τέμνειν εἶναι, τοὺς δὲ γομφίους οἵους παρὰ τούτων δεξαμένους λεαίνειν.

(*f*) 6, 14. *καὶ, ἐάν τι σχῶ ἀγαθὸν, διδάσκω, καὶ ἄλλοις συνίστημι, παρ' ὧν ἂν ἡγῶμαι ὠφελήσεσθαί τι αὐτοὺς εἰς ἀρετήν. Καὶ τοὺς θησαυροὺς τῶν πάλαι σοφῶν ἀνδρῶν, οὓς ἐκεῖνοι κατέλιπον ἐν βιβλίοις γράψαντες, ἀνελίττων κοινῇ σὺν τοῖς φίλοις διέρχομαι, καὶ, ἄν τι ὁρῶμεν ἀγαθὸν, ἐκλεγόμεθα καὶ μέγα νομίζομεν κέρδος, ἐὰν ἀλλήλοις φίλοι γιγνώμεθα.*

2. Translate and annotate :—

(*a*) *ἀνεῖλεν οὖν ἡ Πυθία μηδένα σοφώτερον εἶναι.*

(*b*) *ἐάν τε σὺ καὶ Ἄνυτος οὐ φῆτε ἐάν τε φῆτε.*

(*c*) *δραχμῆς ἐκ τῆς ὀρχήστρας πριαμένοις.*

(*d*) *κἂν ὦφλε χιλίας δραχμάς, οὐ μεταλαβὼν τὸ πέμπτον μέρος τῶν ψήφων.*

(*e*) *πολλάκις θελω τεθνάναι.*

(*f*) *ἴσως, ἂν μή τινα λυπ ῇς· εἰ δὲ μή, ἀκούσει πόλλα καὶ ἀνάξια σαυτοῦ.*

(*g*) *καὶ οὐκ οἴει ἄσχημον ἂν φανεῖσθαι τὸ τοῦ Σωκράτους πρᾶγμα.*

(*h*) *περὶ τῶν ἀνθρωπείων ἂν ἀεὶ διελέγετο.*

(*i*) *κἀδ δύναμιν ἔρδειν.*

(*j*) *δεσπότην ἑαυτοῦ καθιστάναι.*

(*k*) *οὐδενὶ ἂν μὴ ὅτι προῖκα δοίης, ἀλλ' οὐδ' ἔλαττον τῆς ἀξίας λαβών.*

3. Explain the following words and phrases, as used in these books :—*εἰσιέναι, ἐπὶ τῶν τραπεζῶν, ἀναβέβηκα, ἐρήμην κατηγοροῦντες, ἀναφέρειν, κατελθεῖν, ἐνδεικύναι, ἀπάγειν, εἰσάγειν, ξυνωμοσιῶν, ἐγγυηταί, ὑπακούειν, ἐπαΐειν, ἔισηγεῖσθαι, δοκιμάζεσθαι, ἀποικίαν, μετοικεῖν, ἐπὶ θεῶ-*

ρίαν, οἱ κορυβαντιῶντες, ἀπὸ κυάμου καθίστασθαι, ἀνατίθεναι, συνδικεῖν.

4. Discuss the real, as distinct from the formal, grounds for the attack on Socrates. How far does either Plato or Xenophon give a satisfactory defence on these points?

B. THUCYDIDES, VI.

1. Translate, with necessary notes :—

(*a*) 15, 3, 4. *ὧν γὰρ ἐν ἀξιώματι ὑπὸ τῶν ἀστῶν ταῖς ἐπιθυμίαις μείζοσιν ἢ κατὰ τὴν ὑπάρχουσαν οὐσίαν ἔχρῆτο ἔς τε τὰς ἱπποτροφίας καὶ τὰς ἄλλας δαπάνας· ὅπερ καὶ καθεῖλεν ὕστερον τὴν τῶν Ἀθηναίων πόλιν οὐχ ἥκιστα. φοβηθέντες γὰρ αὐτοῦ οἱ πολλοὶ τὸ μέγεθος τῆς τε κατὰ τὸ ἑαυτοῦ σῶμα παρανομίας ἐς τὴν δίαιταν καὶ τῆς διανοίας ὧν καθ' ἓν ἕκαστον ἐν ὅτῳ γίγνοιτο ἔπρασσεν, ὡς τυραννίδος ἐπιθυμοῦντι πολέμιοι καθέστασαν, καὶ δημοσίᾳ κράτιστα διαθέντι τὰ τοῦ πολέμου, ἰδίᾳ ἕκαστοι τοῖς ἐπιτηδεύμασιν αὐτοῦ ἀχθεσθεντες, καὶ ἄλλοις ἐπιτρέψαντες οὐ διὰ μακροῦ ἔσφηλαν τὴν πόλιν.*

(*b*) 39, 1. *Φήσει τις δημοκρατίαν οὔτε ξυνετὸν οὔτ' ἴσον εἶναι, τοὺς δὲ ἔχοντας τὰ χρήματα καὶ ἄρχειν ἄριστα βελτίστους. ἐγὼ δέ φημι πρῶτα μὲν δῆμον ξυμπαν ὠνομάσθαι, ὀλιγαρχίαν δὲ μέρος, ἔπειτα φύλακας μὲν ἀρίστους εἶναι δ' ἂν βέλτιστα τοὺς ξυνετούς, κρῖναι δ' ἂν ἀκούσαντας ἄριστα τοὺς πολλούς, καὶ ταῦτα ὁμοίως καὶ κατὰ μέρη καὶ ξύμπαντα ἐν δημοκρατίᾳ ἰσομοιρεῖν.*

(*c*) 96, 1, 2. *Καὶ οἱ Συρακόσιοι τοῦ αὐτοῦ θέρους ὡς ἐπύθοντο τοὺς [τε] ἱππέας ἥκοντας τοῖς Ἀθηναίοις καὶ μέλλοντας ἤδη ἐπὶ σφᾶς ἰέναι, νομίσαντες, ἐὰν μὴ τῶν Ἐπιπολῶν κρατήσωσιν οἱ Ἀθηναῖοι, χωρίου ἀποκρήμνου*

τε καὶ ὑπὲρ τῆς πόλεως εὐθὺς κειμένου, οὐκ ἂν ῥᾳδίως σφᾶς, οὐδ' εἰ κρατοῖντο μάχῃ, ἀποτειχισθῆναι, διενοοῦντο τὰς προσβάσεις αὐτῶν φυλάσσειν, ὅπως μὴ κατὰ ταῦτα λάθωσι σφᾶς ἀναβάντες οἱ πολέμιοι· οὐ γὰρ ἂν ἄλλῃ γε αὐτοὺς δυνηθῆναι. ἐξῆρται γὰρ τὸ ἄλλο χωρίον καὶ μέχρι τῆς πόλεως ἐπικλινές τέ ἐστι καὶ ἐπιφανὲς πᾶν ἔσω· καὶ ὠνόμασται ὑπὸ τῶν Συρακοσίων διὰ τὸ ἐπιπολῆς τοῦ ἄλλου εἶναι Ἐπιπολαί.

2. Translate and annotate :—

(a) καὶ ἐκ Μεγάρων τῆς μητροπόλεως οὔσης αὐτοῖς ἐπελθὼν ξυγκατῴκισε.

(b) Σικελιῶται δ' ἄν μοι δοκοῦσιν, ὥς γε νῦν ἔχουσι, καὶ ἔτι ἂν ἧσσον δεινοὶ ἡμῖν γενέσθαι, εἰ ἄρξειαν αὐτῶν Συρακόσιοι.

(c) ἐπειδὴ ἄνευ Ἀθηναίων καὶ ξυνῆψαν πρὸς Σελινουντίους τὸν (v. l. τὸ) πρῶτον πόλεμον, μετὰ σφῶν αὐτῶν καὶ καταλύεσθαι.

(d) ῥαδίας ἔχουσι τῶν πολιτῶν τὰς μεταβολὰς καὶ ἐπιδοχάς.

(e) τό τε φαῦλον καὶ τὸ πάνυ ἀκριβὲς ἄν ξυγκραθὲν μάλιστ' ἂν ἰσχύειν.

(f) ἄλλως τε καὶ εἰ ξυστῶσιν αἱ πόλεις φοβηθεῖσαι.

(g) τῶν τριηράρχων ἐπιφοράς τε πρὸς τῷ ἐκ δημοσίοι μισθῷ διδόντων τοῖς θρανίταις τῶν ναυτῶν καὶ τἆλλα σημείοις · καὶ κατασκευαῖς πολυτελεσι χρησαμένων.

(h) αἰσθανόμενος αὐτοὺς μέγα παρὰ βασιλεῖ Δαρείῳ δύνασθαι.

(i) τὸν Τεμενίτην ἐντὸς ποιησάμενοι.

(*j*) *ταύτην οὖν τὴν κοινὴν τῷ τε δεομένῳ καὶ ὑμῖν νῦν παροῦσαν ἀσφάλειαν μὴ ἀπώσησθε, ἀλλ' ἐξισώσαντες τοῖς ἄλλοις μεθ' ἡμῶν ἀντὶ τοῦ ἀει φυλασσεσθαι αὐτοὺς καὶ ἀντεπιβουλεῦσαί ποτε ἐκ τοῦ ὁμοίου μεταλάβετε.*

(*k*) *ἐστὶ δὲ χερσόνησος ἐν στένῳ ἰσθμῷ προύχουσα ἐς τὸ πέλαγος, τῆς δὲ Συρακοσίων πόλεως οὔτε πλοῦν οὔτε ὁδὸν πολλὴν ἀπέχει.*

(*l*) *τὴν τοῦ πατρὸς ἀνανεωσάμενος πολιτειαν.*

3. Summarize the account given by Thucydides of:—

(*a*) The conspiracy of Harmodius and Aristogeiton.

(*b*) The siegeworks at Syracuse.

GREEK.

THIRD YEAR.

3 Hours Paper.

1. Translate:—*Τῶν τοίνυν τὰς πανηγύρεις καταστησάντων δικίως ἐπαινουμένων, ὅτι τοιοῦτον ἔθος ἡμῖν παρέδοσαν, ὥστε σπεισαμένους καὶ τὰς ἔχθρας τὰς ἐνεστηκυίας διαλυσαμένους, συνελθεῖν εἰς ταὐτὸν, καὶ μετὰ ταῦτ' εὐχὰς καὶ θυσίας κοινὰς ποιησαμένους ἀναμνησθῆναι μὲν τῆς συγγενείας τῆς πρὸς ἀλλήλους ὑπαρχούσης, εὐμενεστέρως δ' εἰς τὸν λοιπὸν χρόνον διατεθῆναι πρὸς ἡμᾶς αὐτοὺς, καὶ τάς τε παλαιὰς ξενίας ἀνανεώσασθαι καὶ καινὰς ἑτέρας ποιήσασθαι, καὶ μήτε τοῖς ἰδιώταις μήτε τοῖς διενεγκοῦσι τὴν φύσιν ἀργὸν εἶναι τὴν διατριβὴν, ἀλλ' ἀθροισθέντων τῶν Ἑλλήνων ἐγγενέσθαι τοῖς μὲν ἐπιδείξασθαι τὰς αὑτῶν εὐτυχίας, τοῖς δὲ θεάσασθαι τούτους πρὸς ἀλλήλους ἀγωνιζομένους, καὶ μηδετέρους ἀθύμως διάγειν, ἀλλ' ἑκατέ-*

ρους ἔχειν ἐφ' οἷς φιλοτιμηθῶσιν, οἱ μὲν ὅταν ἴδωσι τοὺς ἀθλητὰς αὑτῶν ἕνεκα πονοῦντας, οἱ δ' ὅταν ἐνθυμηθῶσιν, ὅτι πάντες ἐπὶ τὴν σφετέραν θεωρίαν ἥκουσι——τοσούτων τοίνυν ἀγαθῶν διὰ τὰς συνόδους ἡμῖν γιγνομένων οὐδ' ἐν τούτοις ἡ πόλις ἡμῶν ἀπελείφθη.

2. State briefly what Isocrates says of the rival services of Sparta and Athens in the Persian war.

3. Translate :—

ΧΡ. *Σὺ δ', ὦ κράτιστε Πλοῦτε πάντων δαιμόνων,*
εἴσω μετ' ἐμοῦ δεῦρ' εἴσιθ'. ἡ γὰρ οἰκία
αἵτη, στὶν ἣν δεῖ χρημάτων σε τήμερον
μεστὴν ποιῆσαι καὶ δικαίως κἀδίκως.

ΠΛ. *Ἀλλ' ἄχθομαι μὲν εἰσιὼν νὴ τοὺς θεούς*
εἰς οἰκίαν ἑκάστοτ' ἀλλοτρίαν πάνυ·
ἀγαθὸν γὰρ ἀπελαυσ' οὐδὲν αὐτοῦ πώποτε.
Ἤν μὲν γὰρ, ὡς φειδωλὸν εἰσελθὼν τύχω,
εὐθὺς κατώρυξέν με κατὰ τῆς γῆς κάτω·
κἄν τις προσέλθῃ χρηστὸς ἄνθρωπος φίλος
αἰτῶν λαβεῖν τι μικρὸν ἀργυρίδιον,
ἔξαρνος ἐστι μηδ' ἰδεῖν με πώποτε.

4. Translate :—

In the meantime the Athenians landed, and advanced straightway with all their forces and took Thyrea. The town they burnt down and plundered the property in it, and took the Aeginetans with them to Athens, excepting those that had fallen in battle, and the Lacedaemonian commander who was with them, Tantalus, the son of Patrocles, for he was wounded and taken prisoner. They also took with them some few individuals from Cythera, whom they thought best to remove for security. These the

Athenians determined to deposit in the islands; to order the rest of the Cytherians, while they retained their own country to pay a tribute of four talents; to put to death all the Aeginetans that had been taken, for their former perpetual hostility; and to throw Tantalus into prison with the other Lacedaemonians taken in the island.

5. Translate:—

Οὐκ ἄκαιρον δ' ἂν γένοιτο καὶ Λέσβιον μῦθόν τινα διηγήσασθαί σοι πάλαι γενόμενον. Ὅτε τὸν Ὀρφέα διεσπάσαντο αἱ Θρᾷτται, φασὶ τὴν κεφαλὴν αὐτοῦ σὺν τῇ λύρᾳ ἐς τὸν Ἔβρον ἐμπεσοῦσαν ἐκβληθῆναι ἐς τὸν μέλανα κόλπον, καὶ ἐπιπλεῖν γε τὴν κεφαλὴν τῇ λύρᾳ, τὴν μὲν ἄδουσαν θρῆνον τινα ἐπὶ τῷ Ὀρφείῳ μόρῳ, τὴν λύραν δὲ αὐτὴν ὑπηχεῖν τῶν ἀνέμων ἐμπιπτόντων ταῖς χορδαῖς, καὶ οὕτω μετ' ᾠδῆς προσενεχθῆναι τῇ Λέσβῳ, κἀκείνους ἀνελομένους τὴν μὲν κεφαλὴν καταθάψαι ἵνα περ νῦν τὸ βακχεῖον αὐτοῖς ἔστι, τὴν λύραν δὲ ἀναθεῖναι ἐς τοῦ Ἀκόλλωνος τὸ ἱερὸν, καὶ ἐπὶ πολύ γε σώζεσθαι αὐτὴν. Χρόνῳ δὲ ὕστερον Νέανθον τὸν τοῦ Πιττακου τοῦ τυραννου ταῦτα ὑπὲρ τῆς λύρας πυνθανόμενον, ὡς ἐκήλει μὲν θήρια καὶ φυτὰ καὶ λίθους, ἐμελῴδει δὲ καὶ μετὰ τὴν Ὀρφέως συμφορὰν μηδενὸς ἁπτομένου, πρὸς ἔρωτα τοῦ κτήματος ἐκπεσεῖν καὶ διαφθείραντα τὸν ἱερέας μεγάλοις χρήμασι πεῖσαι ὑποθέντα ἑτέραν ὁμοίαν λύραν, δοῦναι αὐτῷ τὴν τοῦ Ὀρφέως, λαβόντα δὲ μεθ' ἡμέραν μὲν ἐν τῇ πόλει χρῆσθαι οὐκ ἀσφαλὲς οἴεσθαι εἶναι, νύκτωρ δὲ ὑπὸ κόλπον ἔχοντα μόνον προελθεῖν ἐς τὸ προαστεῖον.

6. Give the force of the words underlined in the following:—

(α) ΧΡ. Ἀλλ' αἶρε ταχέως. ΠΛ. μηδαμῶς.

(β) ἦν, μεθίεμεν.

(γ) ἐγὼ γὰρ εἶμι Πλοῦτος.

(δ) εἶτ' ἐσίγας Πλοῦτος ὤν;

(ε) ἠπείλησ' ὅτι βαδιοῖμην.

(ζ) Αὐτίκα γὰρ ἄρχει διὰ τίν' ὁ Ζεὺς τὴν θεῶν;

(η) Καὶ νὴ Δί' εὔχονταί γε πλουτεῖν ἄντικρυς·

(θ) ΠΔ. πῶς; ΧΡ. ὅπως.

(ι) καὶ δὴ βαδίζω.

(κ) καὶ μὴν ὁρῶ καὶ Βλεψίδημον τουτονί.

(λ) Ἀλλ' εἶα νῦν τῶν σκωμμάτων ἀπαλλαγέντες ἤδη.

CLASSICAL SCHOLARSHIPS.

GREEK PROSE AND GREEK TRANSLATION AT SIGHT.

SEPTEMBER.

Examiner,..... .....FRANK CARTER, M.A.

A. For Greek Prose :—

The territory of Ionopolis does not produce fruits or grain in any great abundance, but contains large quantities of gold beneath the earth. It was originally colonized by certain Hollandian farmers who removed from the neighbouring territory because they wished to live in freedom and independence. And for many years these lived a laborious and peaceful life, oppressing the natives somewhat, but in other respects living piously and virtuously. But at last certain foreigners, Angloi and others, discovered mines, and proceeded to settle in the county in large numbers in the hope of gaining great wealth. But they were not allowed any share in the government of the country,

for the Hollandioi, as before, remained entire masters. Hence strife and factions arose ; the Angloi claimed that as they also paid taxes, they ought to share equally in political rights ; but the Hollandioi replied that since they were not willing to fight for the country, they had not either any right to citizenship. For a few years previously, when war seemed likely to break out, the colonists of the Angloi had refused to serve.

B. Translate :—

(1) „Κάμμορε, τίπτε τοι ὧδε Ποσειδάων ἐνοσίχθων
ὠδύσατ' ἐκπάγλως, ὅτι τοι κακὰ πολλὰ φυτεύει ;
οὐ μὲν δή σε καταφθίσει, μάλα περ μενεαίνων.
ἀλλὰ μάλ' ὧδ' ἔρξαι, δοκέεις δέ μοι οὐκ ἀπινύσσειν·
εἵματα ταῦτ' ἀποδὺς σχεδίην ἀνέμοισι φέρεσθαι
κάλλιπ', ἀτὰρ χείρεσσι νέων ἐπιμαίεο νόστου
γαίης Φαιήκων, ὅθι τοι μοῖρ' ἐστὶν ἀλύξαι.
τῇ δὲ, τόδε κρήδεμνον ὑπὸ στέρνοιο τανύσσαι
ἄμβροτον· οὐδέ τί τοι παθέειν δέος οὐδ' ἀπολέσθαι.
αὐτὰρ ἐπὴν χείρεσσιν ἐφάψεαι ἠπείροιο,
ἂψ ἀπολυσάμενος βαλέειν εἰς οἶνοπα πόντον
πολλὸν ἀπ' ἠπείρου, αὐτὸς δ' ἀπονόσφι τραπέσθαι."

(2) καὶ γνοὺς ὅτι ἀναγκασθήσεται ἢ ταὐτὰ λέγειν οἷς διέβαλλεν ἢ τἀναντία εἰπὼν ψευδὴς φανήσεσθαι, παρῄνει τοῖς Ἀθηναίοις, ὁρῶν αὐτοὺς καὶ ὡρμημένους τι τὸ πλέον τῇ γνώμῃ στρατεύειν, ὡς χρὴ κατασκόμεν μὴ πέμπειν μηδὲ διαμέλλειν καιρὸν παριέντας, εἰ δὲ δοκεῖ αὐτοῖς ἀληθῆ εἶναι τὰ ἀγγελλόμενα, πλεῖν ἐπὶ τοὺς ἄνδρας. καὶ ἐς Νικίαν τὸν Νικηράτου στρατηγὸν ὄντα ἀπεσήμαινεν, ἐχθρὸς ὢν καὶ ἐπιτιμῶν, ῥᾴδιον εἶναι παρασκευῇ εἰ ἄνδρες εἶεν οἱ στρατηγοί, πλεύσαντας λαβεῖν τοὺς ἐν τῇ νήσῳ, καὶ αὐτός γ' ἄν, εἰ ἦρχε, ποιῆσαι οὕτως.

CLASSICAL SCHOLARSHIPS.

LATIN PROSE AND LATIN TRANSLATION AT SIGHT.

SEPTEMBER 15TH.

Examiner,.....FRANK CARTER, M.A.

A. For Latin prose:

He was a man of great abilities and even greater force of character. Perhaps in no other age could he have risen to eminence, or even achieved moderate distinction. But it was his singular fortune to be born at a time when his ambitions were natural in their conception and possible in their fulfilment. In all periods of the world's history great wealth has been a source of power; but in the Augustan age of Rome, and in the reign of Victoria there were numerous and striking instances where colossal wealth, suddenly acquired, brought with it the opportunity and the desire of playing a conspicuous part. It was a notable feature of Cecil's character that he identified the fortunes of the empire with his own, and allowed neither to suffer in consequence. Traveller, adventurer, speculator, administrator, he was equally daring in crushing a savage attack and in outwitting a financial rival, and equally happy in securing his wealth and in hazarding his life.

B. Translate:—

(1) haec loca vi quondam et vasta convulsa ruina—
tantum aevi longinqua valet mutare vetustas—
dissiluisse ferunt, cum protinus utraque tellus
una foret: venit medio vi pontus et undis
Hesperium Siculo latus abscidit, arvaque et urbes
litore diductas angusto interluit aestu.
dextrum Scylla latus, laevum inplacata Charybdis
obsidet, atque imo barathri ter gurgite vastos
sorbet in abruptum fluctus rursusque sub auras
erigit alternos et sidera verberat unda.

(2) Set, per deos immortalis, quo illa oratio pertinuit ? An uti vos infestos coniurationi faceret ? scilicet quem res tanta et tam atrox non permovit, eum oratio adcendet. Non ita est, neque cuiquam mortalium iniuriae suae parvae videntur: multi eas gravius aequo habuere. Set alia aliis licentia est, patres conscripti. Qui demissi in obscuro vitam habent, si

quid iracundia deliqere, pauci sciunt, fama atque fortuna eorum pares sunt: qui magno imperio praediti in excelso aetatem agunt, eorum facta cuncti mortales novere. Ita in maxima fortuna minuma licentia est: neque studere neque odisse, set minume irasci decet: quae apud alios iracundia dicitur, ea in imperio superbia atque crudelitas adpellatur.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

THIRD YEAR.

ENGLISH LITERATURE.

THURSDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiners,..... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

A.—MILTON: *Paradise Lost, Bks. I. and II.*

1. Have we any knowledge of writers to whom Milton may have been indebted for the general conception, as well as for important details, of Paradise Lost?

2. Give in outline the narrative contained in Bk. II.

3. Examine the assertion that the two books studied "contain the finest poetical results of Milton's genius."

4. In what way do these two books manifest: *(a)* Milton's learning and accuracy of scholarship; *(b)* his sense of precision in selecting or in coining words; *(c)* his mastery of poetic rhythm? Quote from the text in support of each point.

B.—SHAKSPERE: *The Tempest.*

1. "The Tempest is a romantic or fantastic comedy with a distinct operatic element." Discuss this assertion.

2. Narrate the events told in any act of the play; and show how Shakspere used the method of *grouping* his characters in it.

3. Give an account of the part of Caliban in the play, and discuss his nature and disposition with the help of quotations from the text.

4. Select five words or expressions that call for special explanation; and give their meaning (with the help of derivation, if necessary).

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

ENGLISH LITERATURE.

THURSDAY, SEPTEMBER 17TH :—AFTERNOON, 2 TO 3.30.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

A.—SPALDING.—*English Literature*, Part III., chap. VI. to end.

1. Mention the chief minor dramatists of the Elizabethan and Early Stuart time. Briefly state their characteristics, naming, when you can, their typical plays.

2. Name Elizabethan translators of Homer, Ariosto and Tasso. Write on the brothers Fletcher and Milton's earlier poems.

3. State the character of each of the following works and name its author: Hudibras, Essay of Dramatic Poesie, Absalom and Achitophel, Rape of the Lock, The Citizen of the World, The City of the Plague.

4. Give an account of the rise of the Review.

5. Write on Thomas Campbell. Compare Macaulay and Alison.

6. Give some account of the historians of the nineteenth century who have taken ancient or mediaeval history as their theme. Give an outline of the course of British philosophy during the eighteenth and nineteenth centuries.

B.—TRENCH.—*Study of Words.*

(The paper is the same as that set for the Second Year Exhibitions. The examination will take place on Monday, Sept. 21, at 2 p.m.).

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

THIRD YEAR.

ENGLISH COMPOSITION.

FRIDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

Examiners,..... { CHAS. E. MOYSE, B.A.
P. T. LAFLEUR, M.A.

1. In how many ways is the idea of *purpose* expressed in English ? Illustrate with an example for each mode of expression, without changing the sense.

2. What are the emphatic positions for words in a sentence ? Show this clearly with the help of examples.

3. Give five instances of words in common use to which a wrong meaning is ordinarily attached; and state their true signification.

4. Distinguish between: seem and appear; persuade and convince; statement and assertion; answer and reply; allude and refer.

5. What divisions and sub-divisions might be suggested for use in the composition of an essay on the subject of "Culture"?

CONCOURS POUR LES BOURSES DE 3ME ANNEE.

LE 18 SEPTEMBRE, DE 9 HRES À MIDI.

Examinateurs,..... { M. INGRÈS.
J. L. MORIN.

1. Traduisez :

Henriette. Hé doucement, ma sœur. Où donc est la morale
Qui sait si bien régir la partie animale,
Et retenir la bride aux efforts du *courroux*. (1)
Armande. Mais vous qui m'*en* (2) parlez, *où* (3) la pratiquez-vous ?
De répondre à l'amour que l'on vous fait paraître
Sans le *congé* (4) de ceux qui vous ont donné l'être ?
Sachez que le devoir vous soumet à leurs lois,
Qu'il ne vous est permis d'aimer que par leur choix ;
Qu'ils ont sur votre cœur l'autorité suprême,
Et qu'il est criminel d'en disposer vous-même.
Henriette. Je rends grâce aux bontés que vous me faites voir

De m'enseigner si bien les choses du devoir,
Mon cœur sur vos leçons veut régler sa conduite ;
Et, pour vous faire voir, ma sœur, que j'en profite,
Clitandre prenez soin d'appuyer votre amour
De l'agrément de ceux dont j'ai reçu le jour.
Faites-vous (5) sur mes vœux un pouvoir légitime,
Et *me donnez* (5) moyen de vous aimer sans crime.
Clitandre. J'y vais de tous mes soins travailler hautement ;
Et j'attendais de vous ce doux consentement.

MOLIÈRE, *Les Femmes savantes, Ac. I, Sc. II.*

2. (1) Donner un synonyme de *courroux ?*
(2) A quoi *en* se rapporte-t-il ?
(3) Quel autre mot pourrait-on employer au lieu de *où ?*
(4) De quel mot se sert-on ordinairement dans ce sens au lieu de *congé?*
(5) Pourquoi dans *faites-vous* le pronom est-il après le verbe, et avan dans *me donnez?*

3. (*a*) Quel travers Molière attaque-t-il dans les *Femmes savantes?* (*b*) et dans quelle société ce travers s'était-il développé ? (*c*) Dans quelles autres comédies Molière avait-il déjà attaqué le même ridicule ?

4. Faites un résumé du *dénoûment des Femmes savantes.*

5. Traduisez les extraits suivants pris de *Britannicus :*

Quelques titres nouveaux que Rome lui défère,
Il n'en reçoit point qu'il ne donne à sa mère.
Ne saurait-il (l'empereur) rien voir qu'il n'emprunte vos yeux ?
Sur le moindre discours qu'on pourra vous redire
Serez-vous toujours prête à partager l'empire ?
Nous craindrez-vous sans cesse, et vos embrassements
Ne se passeront-ils qu'en éclaircissements ?
Ah! quittez d'un censeur la triste diligence;
D'une mère facile affectez l'indulgence ;
Souffrez quelques froideurs sans les faire éclater
Et n'avertissez point la cour de vous quitter.

6. Faites une brève analyse de cette tragédie.

7. Faites brièvement *l'historique du théâtre* en France, depuis son origine jusqu'à Corneille.

8. (*a*) Indiquez les causes de la Renaissance, (*b*) et faites connaître la réforme littéraire du XVIe siècle en France ; (*c*) nommez les plus grands écrivains du XVIe siècle et leurs principaux ouvrages.

9. Quels sont les principaux caractères de la littérature française au XVIIIe siècle, et comparez cette littérature à celle du XVIIe siècle.

10. Ecrivez en français sous forme de lettre, une courte page sur l'*Utilité des Expositions.*

MATHEMATICAL SCHOLARSHIPS.

ANALYTICAL GEOMETRY—*(First Paper.)*

TUESDAY, 15TH SEPTEMBER:—MORNING, 9 TO 12.

Examiner.....ALEXANDER JOHNSON, M.A., PH.D.

1. Show that the equation of the second degree represents a parabola (define the curve) when the first three terms form a perfect square. Give the geometrical interpretation of this form, and show that by a proper choice of axes the equation may be transformed into a very simple shape.

2. Describe a mechanical method of drawing an hyperbola by continued motion proving the property on which it depends.

3. A triangle A B C circumscribes a given circle; the angle at C is given, and B moves along a fixed line; find the locus of A.

4. If an equilateral hyperbola circumscribe a triangle it will also pass through the intersection of its perpendiculars.

5. If a pair of radii be drawn through a centre of similitude of two similar conics, the chords joining their extremities will be either parallel, or will meet on the chord of intersection of the conics.

6. Find the length of the perpendicular from the focus on the tangent to a parabola at a given point.

7. In the ellipse, the line joining the focus to the pole of any chord passing through it is perpendicular to that chord.

8. Give a general proof that in any conic section the squares of the ordinates of any diameter are proportional to the rectangles under the segments which they make on the diameter.

9. Given the base and vertical angle of a triangle, find the locus of the vertex, the axes having any position.

10. Find in the most general form the equation of the circle in polar co-ordinates.

11. Find the tangent at the point

$$(5, 4) \text{ to } (x - 2)^2 + (z - 3)^2 = 10.$$

12. If the equation of a right line contain an indeterminate quantity in the first degree, the right line will always pass through a fixed point.

13. Find the length of the perpendicular from the origin on

$$a(x - a) + b(z - b) = 0.$$

MATHEMATICAL SCHOLARSHIPS.

ANALYTICAL GEOMETRY.—(*Second Paper*).

WEDNESDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, M.A., LL.D.

1. Show that $a\gamma = k\,\beta\delta$ is a conic circumscribing a quadrilateral, and find the condition that this conic should be a circle.

2. Find the equation of a conic passing through the points where a given conic, $S = O$, meets the axes.

3. From the equation of the hyperbola $x\,y = k_2$, show that the lines $x = o$, $y = o$ are tangents whose points of contact are at infinity.

4. Prove that two conics similar and similarly placed meet each other in two infinitely distant points, and therefore only in two finite points.

5. Show how MacLaurin's theorem for the construction of a conic section may be derived from Pascal's theorem for an inscribed hexagon.

6. If N be the length of the normal to an ellipse at any point, and ψ the angle between the normal and the focal radius vector, prove that the radius of curvature at the point is $\frac{N}{\cos^2\psi}$. Hence give a simple geometrical construction for the radius of curvature.

7. Find the equation of the chord joining two points $\alpha'\,\beta'\,\gamma'$, $\alpha''\,\beta''\,\gamma''$ on the curve $l\,\beta\,\gamma + m\,\gamma\,\alpha + n\,\alpha\,\beta = o$.

8. Given a line and a circle, find a point such that if any chord be drawn through it, and perpendiculars let fall from its extremities on the given line, the rectangle under these perpendiculars may be constant.

9. Apply trilinear co-ordinates to deduce the harmonic properties of a complete quadrilateral.

10. Prove that three right lines will be concurrent, if, when their equations are multiplied each by a constant and added together, the sum is *identically* $= o$.

11. Find the locus of the centre of a circle which passes through a given point and makes a given intercept on a given line.

12. The portion of any tangent to an hyperbola intercepted by the asymptotes is bisected at the curve and is equal to the conjugate diameter

SCIENCE SCHOLARSHIPS.

MATHEMATICS.

ALGEBRA—TRIGONOMETRY.

MONDAY, SEPTEMBER 21ST:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. If a determinant vanish, its minors A_1, A^2, etc., are respectively proportional to B_1, B_2, etc.

2. Calculate the determinant

$$\begin{vmatrix} 5 & -10 & 11 & 0 \\ -10 & -11 & 12 & 4 \\ 11 & 12 & -11 & 2 \\ 0 & 4 & 2 & -6 \end{vmatrix}$$

3. Form the equation whose roots are the squares of the differences of these of

$$x^3 - 7x + 6 = 0$$

4. Solve the equation $x_7 - 1 = 0$

5. Find the maximum and minimum values of

$$f(x) = 2x_3 - 3x^2 - 36x + 14$$

6. Any number which renders positive the polynomial $f(x)$ and all its derived functions $f_1(x), f_2(x) \ldots - f_n(x)$ is a superior limit of the positive roots of the equation $f(x) = 0$

7. If E be the *spherical excess* prove

$$\cot \tfrac{1}{2} E = \frac{\cot \tfrac{1}{2} a \cot \tfrac{1}{2} b + \cos C}{\sin C}$$

8. In a spherical triangle prove

$$\sin c \cot a = \cot A \sin B + \cos B \cos c$$

9. In a spherical triangle given $A = 68^\circ\ 40'$, $B = 56^\circ\ 20'$, $c = 84^\circ\ 30'$ find a.

10. Express $\sin m\theta$ in terms of the sines and cosines of θ.

MATHEMATICAL SCHOLARSHIPS.

CALCULUS.

FRIDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. Find the equation of the evolute to the hypocycloid.

$$x^{\frac{2}{3}} + y^{\frac{2}{3}} = a^{\frac{2}{3}}$$

2. Investigate a formula for finding the radius of curvature, and the co-ordinates of the centre of the osculating circle at any point o f any given curve.

3. Prove that the expression in polar co-ordinates for the perpendicular on the tangent to any curve is

$$\frac{1}{p^2} = u^2 + \left(\frac{d\,u}{d\,\theta}\right)^2$$

4. If $\frac{f(x) + \phi(x)}{f(x) - \phi(x)}$ be a maximum

show immediately that $\frac{f(x)}{\phi(x)}$ is a minimum.

5. If V be the volume of a solid of revolution prove that

$$\frac{d\,V}{d\,x} = \pi y^2$$

6. If $u = \{(a-x)^2 + (b-y)^2 + (c-z)^2\}^{-\frac{1}{2}}$ show

that $\frac{d\,u^2}{d\,x^2} + \frac{d\,u^2}{d\,y^2} + \frac{d\,u^2}{d\,z^2} = 0$

7. Find x, when u is a minimum in $a\,u^2 - u^2\,x^2 + x^4 = 0$

8. A solid sector is cut out of a sphere of 10 feet radius by a cone, the angle of which is 120° ; find the radius of the sphere whose solid contents are equal to those of the sector.

9. In the cardioid $r = a\,(1 + \cos\theta)$, prove that $s = 4\,a\,\frac{\sin\theta}{2}$

10. Find the area of the curve of which the equation is

$$y^3 - 3\,a\,x\,y + x^2 = 0$$

11. Find the integrals

$$\int \frac{d\,x}{a + b \sin x}; \quad \int e^x \sin k\,x\,d\,x; \quad \int x^3 (\log x)^2\,d\,x$$

12. Find the integrals

$$\int \cos^3\theta \sin 2\theta\,d\,\theta; \quad \int \frac{d\,x}{\cos^2 x\,(a + b \cos x)}$$

13. Find by integration the area of a circle.

SCIENCE SCHOLARSHIPS.

BOTANY.

FIRST PAPER.

WEDNESDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....D. P. PENHALLOW, M.A.Sc.

1. Give a concise statement of the law relating to cross and close fertilization of plants, and cite in illustration cases which may have come under observation during the past season.

2. Describe the reproductive process in Fucus vesiculosus.

3. Give a concise account of the absorption of water by the roots of plants, with experimental proof of such action.

4. Outline fully the characteristics of a typical (1) Monocotyledonous Angiosperm, and (2) a Gymnosperm.

5. Describe fully the part which leaves take in the appropriation and digestion of carbon.

6. Give an account of the nature and sources of plant food.

7. Give a full account of the anatomy of the leaf in an Angiospermous plant, and show the relation between structural variation and adaptation to special functions.

8. Give an account of the morphological differences to be observed between the reproductive organs of (1) a fern, (2) a Gymnosperm, (3) a Monocotyledonous Angiosperm, and (4) a Dicotyledonous Angiosperm.

9. Give an account of the law of reversion as applied to the theory of development. Examples.

10. State what you can concerning the relation of dimorphism and dichogamy to cross fertilization. Examples.

11. Describe as fully as you can, the life history of (*a*) yeast, (*b*) a fern, and (*c*) selaginella, contrasting the two latter.

12. Give an account of any noteworthy observations made during the past summer.

SCIENCE SCHOLARSHIPS.

BOTANY.

SECOND PAPER.

WEDNESDAY, SEPTEMBER 16TH :—AFTERNOON, 2 TO 5.

Examiner,.....D. P. PENHALLOW, M.A.Sc.

1. State what structures are represented in specimen No. 1. Give an account of the life history of this genus, and enumerate any Canadian representatives of the Group with which you may be familiar.

2. Show what families of gymnospermous plants are indigenous to Canada, and enumerate as far as possible the genera and species found here.

3. State what group of plants is represented by specimen No. 3. Show what structures are present; outline the general distribution of the members of this alliance, and state what economic value they possess.

4. Show how the families the Rosaceae, Saxifragaceae and Ranunculaceae may be distinguished.

5. Give the leading characteristics of the Compositae, Dipsaceae, Solanaceae, and Papaveraceae.

6. Cite three families of plants of Canadian distribution, of leading economic value; show what species are chiefly employed and for what purposes.

7. Give a full account of the works consulted and the territory explored during the past summer, and make remarks upon any differences you may have observed in the floras of various districts.

8. Rudbeckia hirta, Chrysanthemum leucanthemum, Scrophularia nodosa, Verbascum thapsus, Aralia racemosa, Hieracium aurantiacum, Caltha palustris. State whether these plants are indigenous or introduced, and if the latter, from what source. Explain some of the methods by which plants are distributed and become established in new centres.

Determination of species on Friday, 9 to 12 a.m.

THIRD YEAR SCHOLARSHIPS.

LOGIC.

THURSDAY, 17TH SEPTEMBER :—MORNING, 9 TO 12.

Examiners,..... J. CLARK MURRAY, LL.D. / P. T. LAFLEUR, M.A.

1. Explain briefly the following, with examples :—positive and negative terms, the Predicables, Denotation and Connotation.

2. Give the rules of logical definition.

3. Explain the nature of logical opposition.

4. Write the moods of the second figure ; and reduce any one of them to the first, employing both symbols and terms in the process.

5. Explain the fallacies of Begging the Question and of False Cause, with examples (original, if possible).

6. Select from popular, or other, literature a specimen of unsound reasoning (*not* from the text-book) ; express this in its most plausible form ; and shew why it is invalid.

7. What distinction is drawn between observation and experiment?

8. Explain the nature of the argument from analogy, and give examples of analogies strong and weak.

9. Give the substance of Jevons' remarks on the requisites of a philosophical language.

SCIENCE SCHOLARSHIPS.

CHEMISTRY.

THURSDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, M.A., Ph.D.

1. How many kilos of Salt and Sulphuric Acid would be required in order to obtain 100 kilos of aqueous Hydrochloric Acid containing 20.22 per cent. of the gas?

2. What is the probable constitution of the Oxyacids of Phosphorus?

3. Explian the chemistry of the Ammonia-Soda process.

4. An open vessel is heated from 0° C to 300°. What proportion of the air that it contained at first now remains?

5. What gas is produced when Sodium Acetate and Caustic Soda are heated together? Describe its properties.

6. 0.3059 gram of a substance yielded on combustion 0.60 gram of Carbon Dioxide and 0.304 gram of Water. Express the composition of the substance by the simplest formula possible.

7. Explain the constitution of each of the following bodies:—Chloroform, Aniline, Glycol, Lactic Acid, Pyridine.

8. What are the chief reactions by which the Fatty Acids can be formed?

9. State what you know with regard to the chemistry of the Terpenes.

10. Describe a method for determining the vapour density of an organic body and explain the importance of such determinations.

11. State briefly how you would prepare each of the following compounds:—Carbon Disulphide, Phosphine, Alum, Calomel.

FACULTY OF APPLIED SCIENCE.

ENTRANCE EXAMINATIONS, 1896.

FACULTY OF APPLIED SCIENCE.

MATRICULATION EXAMINATION.

MATHEMATICS *(First Paper).*

WEDNESDAY, SEPTEMBER 16TH :—MORNING, 9 TO 12.

N.B.—It is necessary to pass in each subject. All the work must be shown; answers alone will not be accepted. Write your name at the top of the paper; write in the margin only the number of the question you are about to answer. One side only of the paper will be examined, the other may be used for scribbling.

ARITHMETIC.

1. What sum at 5 per cent. simple interest will amount to $1,000 in 4½ years ?

2. Find the square root of ·002 and of ·0002, each to 3 decimal places.

3. A vessel whose volume is 277·274 cubic inches will contain 10 pounds (avoirdupois) of water. Hence find the weight in grains of a cubic inch of water.

Find also the capacity of the vessel in litres.

4. What is an *are ?* Calculate the number of acres in a hectare.

ALGEBRA.

5. Find the factors of

$4x^2 + 23x + 15$, $x^3 + 64$, $a^4 - (b + c)^4$, $2(ac + bd) + (b^2 + d^2) - (a^2 + c^2)$.

6. Find the highest common factor of

$$2x^4 - 2x^3 + x^2 + 3x - 6 \text{ and } 4x^4 - 2x^3 + 3x - 9.$$

7. Simplify $\dfrac{2a}{(x-2a)^2} - \dfrac{x-a}{x^2-5ax+6a^2} + \dfrac{2}{x-3a}$,

and show that $\dfrac{7+3\sqrt{5}}{7-3\sqrt{5}} + \dfrac{7-3\sqrt{5}}{7+3\sqrt{5}} = 47.$

8. Solve the equations:

(1) $\dfrac{3x+4}{2x+1} - \dfrac{x+19}{x+12} = \dfrac{1}{2}$,

(2) $\dfrac{3x+4}{2x+1} - \dfrac{x-16}{x+12} = 3$,

(3) $\sqrt{x} - \sqrt{x-8} = \dfrac{2}{\sqrt{x-8}}$,

(4) $\begin{cases} \dfrac{1}{x} + \dfrac{1}{y} = 2 \\ x + y = 2 \end{cases}$

9. A court can be paved with 200 square tiles of a certain size or with 128 tiles one inch larger each way. Find the size of the tiles.

MATRICULATION EXAMINATION.

MATHEMATICS *(Second Paper).*

WEDNESDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

GEOMETRY.

1. In a right-angled triangle the squares on the sides containing the right angle are together equal to the square on the hypotenuse.

2. If a straight line be bisected and also cut unequally, the sum of the squares on the unequal parts shall be equal to twice the square on half the line, and twice the square on the line between the points of section.

3. From the vertex of any triangle draw a line perpendicular to the base, and prove by means of questions 1 and 2 that the sum of the squares on the sides of a triangle is equal to twice the square on half the base, and twice the square on the line joining the vertex to the middle point of the base.

4. From a given circle to cut off a segment containing an angle equal to a given angle.

5. Describe a circle in a given triangle.

6. Triangles which have an angle of the one equal to an angle of the other have the sides about the equal angles reciprocally proportional.

TRIGONOMETRY.

7. Define the sine, cosine, tangent, and secant of an angle. State and prove a relation connecting the sine and the cosine, and one connecting the secant and the tangent.

8. Show how to construct two angles whose cosines are each $\frac{2}{3}$. Find the sines of these angles.

9. Prove that

(1) $\operatorname{cosec}^2 A + \sec^2 A = \operatorname{cosec}^2 A \sec^2 A$,

(2) $\cot^2 A - \cos^2 A = \cot^2 A \cos^2 A$,

(3) $\cos(90° - A) = \sin A$,

(4) $\cos(A - B) = \cos A \cos B + \sin A \sin B$.

10. If $B = A$ in the last relation, what well known result would follow?

FACULTY OF APPLIED SCIENCE.

SECOND YEAR PRIZE EXAMINATION.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 16TH :—MORNING, 9 TO 12.

Examiners, ... { G. H. CHANDLER, M.A. / R. S. LEA, MA.E.

1. The rectangle contained by the sides of a triangle is equal to the rectangle contained by the perpendicular from the vertex on the base and the diameter of the circumscribed circle.

2. The sum of the plane angles of a convex polyhedral angle is less than four right angles.

3. Investigate a formula for determining the volume of the frustum of a triangular pyramid.

4. From a point outside a parabola to draw a pair of tangents to the curve.

5. Find the locus of the centre of a circle which passes through a fixed point and touches a given line.

6. Prove that a quadratic equation can have only two roots. Determine the relation connecting the coefficients of the equation and the sum of the roots.

7. Solve the equations:

(1) $$\cfrac{5}{6 - \cfrac{5}{6 - \cfrac{5}{6 - x}}} = x,$$

(2) $$\begin{cases} x^2 y^2 + 192 = 28xy. \\ x + y = 8 \end{cases}$$

(3) $$\sqrt{x} + \sqrt{4a + x} = 2\sqrt{b + x}.$$

8. Find the sum of n terms of the series

$$\frac{2}{5} + \frac{3}{5^2} + \frac{2}{5^3} + \frac{3}{5^4} + \ldots.$$

9. Show that

(1) $$\tan \tfrac{1}{2}(A + B) + \tan \tfrac{1}{2}(A - B) = \frac{2 \sin A}{\cos A + \cos B},$$

(2) $$\tan 3A = \frac{3 \tan A - \tan^3 A}{1 - 3 \tan^2 A},$$

(3) $$\tan^{-1} \frac{5}{7} + \tan^{-1} \frac{1}{6} = \frac{1}{4}\pi.$$

10. In any plane triangle

$$\tan A + \tan B + \tan C = \tan A \tan B \tan C.$$

11. In any right-angled spherical triangle

(1) $$\cos A = \frac{\tan b}{\tan c},$$

(2) $$\tan^2 \tfrac{1}{2} A = \frac{\sin (c - b)}{\sin (c + b)}.$$

12. D, E, F are the middle points of the sides of a triangle $A\ B\ C$; show that the forces represented by $A\ D$, $B\ E$, $C\ F$ are in equilibrium.

EXHIBITION EXAMINATION.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1. Show that

(1) $d(x^x) = (1 + \log x)\, x^x\, dx$,

(2) $d \sin n\theta \sin^n \theta = n \sin^{n-1}\theta \sin (n+1)\theta\, d\theta$

(3) $d[x \tan^{-1} x - \log \sqrt{1+x^2}] = \tan^{-1} x\, dx$.

2. Also that

(1) $\int_0^1 \frac{dx}{e^x + e^{-x}} = \cdot 433$,

(2) $\int_0^{\frac{1}{4}\pi} \sin^4\theta\, d\theta = \cdot 0445$,

(3) $\int_1^2 \frac{dx}{4x^2 - 1} = \cdot 147$.

3*. Find the length of the subnormal of the curve $y^2 = a^2 \log x$ at the point (x, y).

4. Show that the radius of curvature of the hypocycloid

$$x^{\frac{2}{3}} + y^{\frac{2}{3}} = a^{\frac{2}{3}} \text{ is } 3\sqrt[3]{a\,x\,y}.$$

5. Find the vertical angle of the cone of greatest volume which can be described by a right-angled triangle of given hypotenuse.

6. Integrate $\frac{2x\,dx}{1 + x + x^2 + x^3}$.

7. Find the area between the curve $a^2 y = x(x^2 - a^2)$ and the axis of x.

8. Show that the moment of inertia of a hollow sphere whose greatest and least radii are R and r, respectively, is

$$m.\frac{2}{5}\frac{R^5 - r^5}{R^3 - r^3}.$$

9†. Show that $\log \sec x = \frac{x^2}{2} + \frac{x^4}{12} + \frac{x^6}{45} + \ldots$

* For Third Year only. † For Fourth Year only.

10. Find the equations of tangents to the circle
$x^2 + y^2 + 10x - 6y - 2 = 0$ which are parallel to the line $y = 2x - 7$.

11.* Find an expression for the area of a triangle in terms of the co-ordinates of its angular points.

12. Two parabolas have the same vertex and latus rectum $4p$, but their axes are perpendicular to each other; find the length of their common chord.

13†. Prove that parallelograms formed by tangents at the extremities of pairs of conjugate diameters of an ellipse have constant areas.

14. Give a construction for determining the line of quickest descent from a given point to a given straight line.

15*. The sides of triangle are 3, 4, 5; find the distances of the centre of gravity of the triangle from the three angles.

16†. A cylinder rolls down a given inclined plane. Find the acceleration of the centre.

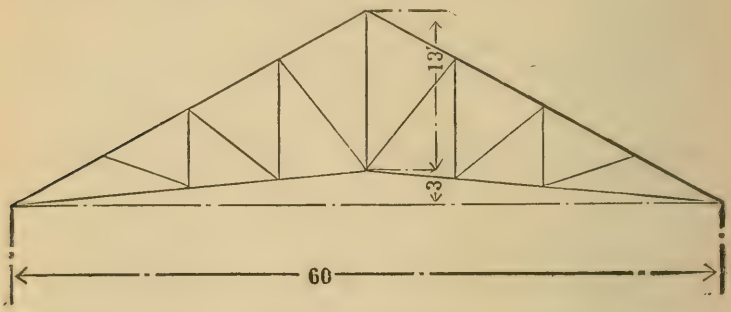
BRITISH ASSOCIATION EXHIBITION.

THEORY OF STRUCTURES.

SEPTEMBER : 9 A.M.

Examiner,..... HENRY T. BOVEY, M. INST. C.E.

1. State the relations between a frame diagram and its reciprocal. Explain Bow's system of lettering as applied to the construction of the latter, and illustrate by means of the following roof-truss :



* For Third Year only. † For Fourth Year only.

Pitch of principals 20 ft.; vertical load 16 lbs. per sq. ft. of floor area; wind pressure 25 lbs. per sq. ft. acting normally to the surface on the right-hand side. The roof is fixed at the right-hand side.

2. The diagonal of a truss is subjected to stresses varying from a maximum of 120,000 lbs. in tension to a minimum of 80,000 lbs. in compression. Find the proper sectional area of the diagonal: 1st, if of steel; 2nd, if of wrought-iron; 3 being the factor of safety.

3. Power is transmitted from one shaft to another by means of a single open belt, 6 inches wide and $\frac{1}{4}$ inch thick, running at a speed of 60 feet per second. If the tension in the loose side of the belt is one-half that in the tight side, and a maximum stress of 300 lbs. per square inch is allowed, find, neglecting the weight of the belt, what horse-power may be transmitted.

4. A string of wood blocks embraces the 24 ins. pulley of an engine, one end of the string being attached to a load of 112 lbs., and the other to a spring balance which indicates 12 lbs. when the pulley is making 60 revols. per minute. Find the work given out at the brake and the coeff. of friction between the blocks and pulley.

5. The front and rear faces of a wall, retaining water level with the top, have a batter of 1 in 12. The height of the wall is 12 feet. The wall is 2 feet wide at the top. Find the width of the base, (*a*) if q is .25, (*b*) if the stress in the base is nowhere to exceed 12,000 lbs. per sq. inch.

6. A cast iron flywheel of 36 sq. ins. section and 120 ins. mean diameter makes 60 revolutions per minute. Find, approximately, the mean energy of rotation. Also, find the number of revolutions per minute after the wheel has lost 800 ft. lbs. of energy.

7. Each piston of a locomotive weighs 300 lbs. What balance weights will completely balance one piston so that there may be no couple and no horizontal force? *Data.* Stroke = 24 ins.; distance c. to c. of cylinders = 42 ins.; radial distance of balance weights = 39 ins.; distance between centres of gravity of balance weights = 57 ins.

8. The area of the compression flange of a cast iron beam is 17 square inches. The thickness of the web is a certain fraction of the depth. The unit stresses are in the ratio of 2 to 5. Find the areas of web and the tension flange which will give a section of maximum strength.

9. In a cast-iron beam the area of the web is *five* times the area of the tension flange, the depth of the beam is 9 ins., and the unit stresses are 2 tons per sq. in. tension and 4 tons per sq. in. in compression. The max. moment of resistance is 162 ins. tons; find the flange and web areas. If

the length of the beam so that its stiffness might not exceed .001. Also find the net weight on the beam and the work of flexure.

10. Determine the dimensions of the strongest section in the form of (*a*) a rectangle with vertical sides, (*b*) an isosceles triangle with horizontal base, that can be cut out of a circular section of diameter $2p$.

11. Describe the method of sections for finding the stresses in the members of a bridge frame.

Taking the case of a girder of this type, apply the method to find the character and amount of the stress in each member, when there is a load of 1 ton on each bottom joint.

12. State the conditions necessary for stability at a plane joint in a masonry structure.

D_1, D_2 are the external and internal diameters of a horizontal section of a round chimney. Find the limiting positions of the centre of pressure at the joint in order that there may be no tension at the joint, the intensity of stress being assumed to vary at a uniform rate across the section.

SCOTT EXHIBITIONS, 1896.

ENGLISH ESSAY.

THURSDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

Write on:—

(b) Sir Isaac Newton.

CONCOURS POUR LE PRIX SCOTT.

SCIENCES, 3me. ANNÉE.

LE 18 SEPTEMBRE 1896 :— DE 9 HRES À MIDI.

Examinateurs,..... { M. INGRÈS.
J. L. MORIN.

1. Quels sont les peuples qui ont le plus contribué à la formation de la langue française, et dans quelle mesure y ont-ils contribué ?

2. (*a*) Qu'entendez-vous par *langue romane ?* (*b*) Quel en est le plus vieux monument que nous possédions ?
(*c*) En quels deux dialectes se divisa-t-elle ? (*d*) Quel était le nom des poètes de chacun d'eux ? (*e*) Indiquez les caractères principaux de ces deux classes de poètes.

3. (*a*) Quelle fut l'origine du théatre en France ? (*b*) Quelles *Associations* s'organisèrent au Moyen Age, et qui donnèrent une grande impulsion au drame ? Nommez une des principales pièces de chacune de ces Associations.

4. (*a*) Quels sont les premiers monuments historiques en France ? (*b*) Nommez les principaux chroniqueurs du Moyen âge et leurs ouvrages.

5. Dites quelque chose (*a*) des causes de la Renaissance, (*b*) de la réforme littéraire du XVIe. siècle en France, (*c*) de la *Pléiade*.

6. Quels sont les principaux écrivains du XVIe. siècle ? Faites une courte esquisse de la vie de l'un deux.

7. Donnez dans une couple de pages une idée générale de *L'Expédition de la Jeune Hardie* par Jules Vernes.

8. Traduisez en Français :

Once Renan was present at a banquet given by Mrs. Aubernon, whose mansion was then the rendezvous of the celebrities of the epoch. Mr. Jules Simon was among them, and in the course of the repast he began to develop an ingenious social theory. Renan, growing tired of it, was about to speak, when the hostess stopped him by saying : " Wait a minute or two, Mr. Renan, and then we shall be happy to hear you."

Renan closed his mouth while Jules Simon continued to hold forth. At length he brought his speech to an end, and Mrs. Aubernon rose to call on Renan. " I think you had something to say," she remarked. " Yes. Madame, you are right. I wanted to ask for a few more potatoes."

The London Globe.

ELECTRICAL ENGINEERING.

THIRD YEAR.

Examiner,..... ..... C. A. Carus-Wilson, M.A., M.Inst. E.E.

1. Twelve lamps having each 88 ohms resistance, hot, are connected to an e.m.f. of 100 volts through a line having 1.3 ohms resistance. Find the e.m.f. at the lamp terminals.

2. The two coils of a Siemens Dynamometer have resistances 0.2 ohms and 0.01 ohms respectively. When a current is passed through the coils in series the deflection is 322. What will be the deflection if the same current is passed through the instrument when the coils are connected in parallel, the current flowing in each coil in the same direction as before?

3. A coil of 50 turns and 1.4 cm mean diameter is placed at the centre of a coil of 400 turns and 90 cm mean diameter carrying 0.606 amperes. The small coil is connected to a galvanometer whose constant is 6.2 equivalent lines per degree of deflection. There is a constant stray field due to an external source of $H = 0.48$ at the centre of the coils. Find the deflection: (1) when the current is reversed in the large coil; (2) when the small coil is suddenly removed.

4. A calibrating coil has 2400 turns, is 38 cms long, and 1.8 cm mean diameter. When the search coil, which has 62 turns, is connected to a galvanometer of constant 53.5 equivalent lines per degree, and a current of 0.6 amperes is reversed in the main coil, a deflection of 260 degrees is noted. Find the reluctance of the return path of the calibrating coil which is generally neglected.

5. A wrought iron rod $\frac{1}{2}$ inch diameter is tested in a magnetic yoke which has a search coil of 10 turns. The galvanometer has a constant of 1280 equivalent lines per degree. A reversal of 0.7 ampere gives a deflection of 304, while a break of the same current gives 94. Find the residual magnetism in lines per square centimeter.

6. A wrought iron ring 14 cm mean diameter has an air gap of 0.2 cm cut in it, and is then magnetised. When the gap is increased to 0.583 cm the current has to be doubled to give the same number of lines across the gap (no leakage). Find the permeability in each case, taking the length of the iron path as $\pi\delta$ in each case.

7. A wrought iron ring of 9 inches mean diameter is wound with 820 turns. A current of 4.2 amperes produces a force of 83 pounds per square inch across a slit in the ring, the faces being in contact. Find the permeability of the iron.

SUPPLEMENTAL EXAMINATIONS, I.

ALGEBRA.

1. Find the highest common factor of

$$3x^4 - 3x^3 - 2x^2 - x - 1 \text{ and } 9x^4 - 3x^3 - x - 1.$$

2. Simplify

(1) $$\frac{\frac{1}{x} - \frac{x+a}{x^2+a^2}}{\frac{1}{a} - \frac{a+x}{a^2+x^2}} + \frac{\frac{1}{x} - \frac{x-a}{x^2+a^2}}{\frac{1}{a} - \frac{a-x}{a^2+x^2}}$$

(2) $5\sqrt[3]{81} - 7\sqrt[3]{192} + 4\sqrt[3]{648}$.

3. Solve the equations

(1) $$\sqrt{x} - \sqrt{4x-3} = \frac{1}{\sqrt{4x-3}},$$

(2) $$\frac{x}{x-2} - \frac{x+1}{x-1} = \frac{x-8}{x-6} - \frac{x-9}{x-7},$$

(3) $$\frac{1}{1+x} - \frac{1}{3-x} = \frac{6}{35},$$

(4) $$\begin{cases} \frac{1}{x} + \frac{1}{y} = 2 \\ x + y = 2 \end{cases}$$

4. When are three quantities in harmonic progression? Prove that the reciprocals of quantities in harmonic progression are in arithmetic progression.

5. Expand $(1 - x^2)^6$ and $(1 - x^2)^{-6}$ each to 4 terms.

FIRST YEAR DYNAMICS.

1. A body starts with velocity 4, and has a uniform acceleration 1½ in the direction of motion. Find (1) the velocity after 10 sec., (2) the average velocity during that time, (3) the distance described in that time.

2. Give the laws of motion and explain the equation $f = ma$ mentioning the different units involved.

3. State and explain the construction required for finding the resultant of two parallel forces.

4. Find the centre of gravity of a triangle, and prove that it is a point of trisection on each median line of the triangle.

5. A body is supported on an inclined plane by a force parallel to the plane. If this force be half the weight of the body, find the inclination of the plane.

6. State Boyle's Law.

A cubic foot of air weighs 570 grains at a pressure of 15 lbs., what will the same volume weigh at a pressure of 16 lbs?

SECOND YEAR DYNAMICS.

1. A point starts with a velocity u and under a constant acceleration $-a$. In how many seconds will it come to rest, and what distance will it have described ?

2. Explain the meaning of the hodograph of a point's motion. Find the acceleration of a point which describes a given circle with constant speed.

3. The components of a force F in two directions making angles α and β with it are

$$\frac{F \sin \alpha}{\sin (\alpha + \beta)} \text{ and } \frac{F \sin \beta}{\sin (\alpha + \beta)}.$$

4. What is meant by the centre of a system of parallel forces, and how is it found ?

5. Find the greatest height and horizontal range of of a projectile, given the initial velocity in magnitude and direction.

6. The lengths of the bars in a vertical triangular frame $A\ B\ C$ are 3, 4, 5 feet respectively; the longest bar $B\ C$ is horizontal, and rests on supports at its ends; a load of 25 lbs. is hung at A. Find the stresses in the three bars and the pressures on the supports.

THIRD YEAR DYNAMICS.

1. Question 2 of second year.

2. Question 5 of second year.

3. Show that a force $W(\sin \theta + \mu \cos \theta)$ will, when acting parallel to a plane of inclination θ, move a weight W up the plane.

4. An engine weighing 5 tons hauls a load of 10 tons at 8 miles per hour, the resistance being 20 pounds per ton. Find the horse power exerted.

5. A ball impinges on an equal ball at rest at an angle of 45° to the line of impact. Both balls being assumed perfectly elastic, show show that their velocities will be equal in magnitude and perpendicular in direction after the impact.

6. What is meant by centre of pressure, and how is it found?

Find the depth of the centre of pressure of a vertical triangle whose base is in the surface.

SUPPLEMENTAL EXAMINATIONS, II.

TRIGONOMETRY.

1. Show that

(1) $\tan^2 A - \sin^2 A = \tan^2 A \sin^2 A$,

(2) $\sin(A + B) = \sin A \cos B + \cos A \sin B$,

(3) $\dfrac{\sin(A+B)}{\sin A + \sin B} = \dfrac{\cos\frac{1}{2}(A+B)}{\cos\frac{1}{2}(A-B)}$,

(4) $\cos A = \cos^2 \frac{1}{2}A - \sin^2 \frac{1}{2}A$.

2. In any plane triangle

$$\cos\tfrac{1}{2}A = \sqrt{\frac{s(s-a)}{bc}}.$$

3. State and prove the corresponding formula for a spherical triangle.

4. Given $a = 109$, $b = 61$, $C = 66° 69' 25''$, show that $c = 102$,
$A = 79° 36' 40''$, $B = 33° 23' 55''$.

SECOND YEAR CALCULUS.

1. Show that

(1) $d\left(\dfrac{e^x - e^{-x}}{e^x + e^{-x}}\right) = \dfrac{4\,dx}{(e^x + e^{-x})^2}$,

(2) $d\left(\dfrac{\sin\theta}{1 + \tan\theta}\right) = \dfrac{\cos^3\theta - \sin^3\theta}{(\cos\theta + \sin\theta)^2}$,

2. Also that

(1) $\displaystyle\int_a^{+a} (a + x)^3\,dx = 4a^2$,

(2) $\displaystyle\int_{-\infty}^{+\infty} \frac{dx}{1 + x^2} = \pi$,

(3) $\int_0^1 \frac{x\,dx}{\sqrt{1-x^4}} = \frac{1}{4}\pi.$

3. Integrate $\frac{(3x^2-1)\,dx}{x(x-1)(x+1)}$.

4. Given the curve $xy = 1 + x^3$, find (1) the point of inflexion, (2) where the tangent is parallel to the axis of x.

5. Show that the minimum value of $\frac{x}{\log x}$ is e.

6. Find the area between the curve $y(1 + x^2) = 1$ and the axis of x.

THIRD YEAR CALCULUS AND ANALYTIC GEOMETRY.

1. Question 1 of second year.

2. Question 2 of second year.

3. Question 6 of second year.

4. Find the moment of inertia of a sphere about a diameter.

5. State Maclaurin's Theorem and by it expand $\cos x$ into a series.

6. Find the limit of the value of

$$\frac{\cos x - \cos mx}{\cos x - \cos nx}$$

as x approaches 0.

7. Find the equation of a tangent to an ellipse which makes an angle of 45° with the axis of x.

8. The sum of the squares of a pair of conjugate diameters of an ellipse is constant.

9. The direction angles of a line are α, β, γ; show that

$$\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 1.$$

10. Given the conic $4x^2 + 15xy - 4y^2 + 8x + 15y = 0$, find (1) the centre, (2) the angle between the axes of co-ordinates and the principal diameters of the curve, (3) the equation when referred to the principal diameters.

FACULTY OF ARTS.

SESSIONAL EXAMINATIONS,

1897.

FACULTY OF ARTS.

GREEK.

FIRST YEAR.

Tales from Herodotus; Homer, Iliad XXIV; Euripides, Scenes from Hecuba.

FRIDAY, APRIL 2ND :—MORNING, 9 TO 12.

A. HERODOTUS.

Translate, parsing, and explaining constructions of, words underlined :—

1 Οἱ Αἰγύπτιοι, πρὶν μὲν ἢ Ψαμμήτιχον σφῶν βασιλεῦσαι, ἐνόμιζον ἑαυτοὺς πρώτους γενέσθαι πάντων ἀνθρώπων· ἐπειδὴ δὲ Ψαμμήτιχος βασιλεύσας ἠθελησεν εἰδέναι οἵτινες γένοιντο πρῶτοι, ἀπὸ τούτου νομίζουσι Φρύγας προτέρους γενέσθαι ἑαυτῶν, τῶν δὲ ἄλλων ἑαυτούς.

2. Ἀπειληθεὶς δὲ ὁ Ἀρίων ἐς ἀπορίαν, παρῃτήσατο αὐτοὺς περιδεῖν αὐτὸν ἐν τῇ σκευῇ πασῇ στάντα ἐν τοῖς ἐδωλίοις ἀείσαι· ἀείσας δὲ ὑπεδέχετο ἑαυτὸν κατεργάσεσθαι.

3. Διαλυθέντος δὲ τοῦ Μηδικοῦ στρατεύματος αἰσχρῶς, ὡς τάχιστα ἐπύθετο ὁ Ἀστυάγης ἔφη ἀπειλῶν τῷ Κύρῳ· "Ἀλλ' οὐδ' ὡς ὁ Κῦρός γε χαιρήσει." Τοσαῦτα εἰπὼν ἀνεσκολόπισε τοὺς τῶν μάγων ὀνειροπόλους, οἳ ἀνέγνωσαν αὐτὸν μεθεῖναι τὸν Κῦρον.

4. Εἰ μέν νυν προεπύθοντο ἢ ἔμαθον οἱ Βαβυλώνιοι τὸ ἐκ τοῦ Κύρου ποιούμενον, περιιδόντες τοὺς Πέρσας ἐσελθεῖν ἐς τὴν πόλιν διέφθειραν ἂν κάκιστα· κατακλείσαντες γὰρ πάσας τὰς πυλίδας τὰς ἐς τὸν ποταμὸν ἀγούσας, καὶ αὐτοὶ ἐπὶ τὰς αἱμασίας ἀναβάντες τὰς παρὰ τὰ τοῦ ποταμοῦ χειλη ἐληλαμένας, ἔλαβον ἂν αὐτοὺς ὡς ἐν κύρτῃ.

5. Ζωπύρου δὲ ἀγαθουργίαν οὐδεὶς Περσῶν ὑπερεβάλετο παρὰ Δαρείῳ κριτῇ οὔτε τῶν ὕστερον γενομένων οὔτε τῶν πρότερον, ὅτι μὴ Κῦρος μόνος· τούτῳ γὰρ οὐδεὶς Περσῶν ἠξίωσέ πω ἑαυτὸν συμβαλεῖν.

B. HOMER.

(i) Translate with notes on words and phrases underlined :—

1. οὐδέ μιν ἠὼς
φαινομένη λήθεσκεν ὑπεὶρ ἅλα τ' ἠιόνας τε,
ἀλλ' ὅ γ' ἐπεὶ ζεύξειεν ὑφ' ἅρμασιν ὠκέας ἵππους
Ἕκτορα δ' ἕλκεσθαι δησάσκετο δίφρου ὄπισθεν.

2. ἀλλ' ἤ τοι κλέψαι μὲν ἐάσομεν— οὐδέ πῃ ἔστιν
λάθρῃ Ἀχιλλῆος—θρασὺν Ἕκτορα· ἦ γὰρ οἱ αἰεὶ
μήτηρ παρμέμβλωκεν ὁμῶς νύκτας τε καὶ ἦμαρ.

3. τῷ δ' ὡς ποθι μοῖρα κραταιὴ
γεινομένῳ ἐπένησε λίνῳ, ὅτε μιν τέκον αὐτή,
ἀργίποδας κύνας ἆσαι, ἑῶν ἀπάνευθε τοκήων.

4. οἱ δ' ἐπεὶ οὖν πόλιος κατέβαν, πεδίον δ' ἀφίκοντο
οἱ μὲν ἄρ' ἄψορροι προτὶ Ἴλιον ἀπονέοντο,
παῖδες καὶ γαμβροί, τὼ δ' οὐ λάθον εὐρύοπα Ζῆν
ἐς πεδίον προφανέντε· ἰδὼν δ' ἐλέησε γέροντα.

5. ἀλλ' ἔτι τις καὶ ἐμεῖο θεῶν ὑπερέσχεθε χεῖρα
ὅς μοι τοιόνδ' ἧκεν ὁδοιπόρον ἀντιβολῆσαι
αἶσιὸν, οἷος δὴ σὺ δέμας καὶ εἶδος ἀγητός,
πέπνυσαι τε νόῳ, μακάρων δ' ἔξεσσι τοκήων.

(ii) Translate :—

1. ᾧ μέν κ' ἀμμίξας δώῃ Ζεὺς τερπικέραυνος
ἄλλοτε μέν τε κακῷ ὅ γε κύρεται, ἄλλοτε δ' ἐσθλῷ·
ὧ δέ κε τῶν λυγρῶν δώῃ, λωβητὸν ἔθηκεν,
καὶ ἑ κακὴ βούβρωστις ἐπὶ χθόνα δῖαν ἐλαύνει,
φοιτᾷ δ' οὔτε θεοῖσι τετιμένος οὔτε βροτοῖσιν.

2. οὐδέ τις ἄλλος
ἔγνω πρόσθ' ἀνδρῶν καλλιζώνων τε γυναικῶν,
ἀλλ' ἄρα Κασσάνδρη, ἱκελη χρυσέῃ Ἀφροδίτῃ,
Πέργαμον εἰσαναβᾶσα φιλον πατέρ' εἰσενόησεν
ἑσταότ' ἐν δίφρῳ, κήρυκά τε ἀστυβοώτην·
τὸν δ' ἄρ' ἐφ' ἡμιόνων ἴδε κείμενον ἐν λεχέεσσι.

(iii) What do you know of the Homeric method of harnessing mules ?

C. EURIPIDES, HECUBA.

1. Translate, with notes on words and phrases underlined :—

(*a*) εἰ δ' ἔστι τοῖς δούλοισι τοὺς ἐλευθέρους
μὴ λυπρὰ μηδὲ καρδίας δηκτήρια
ἐξιστορῆσαι, σοὶ μὲν εἰρῆσθαι χρεών,
ἡμᾶς δ' ἀκοῦσαι τοὺς ἐρωτῶντας τάδε.

(*b*) Ἑλένην νιν αἰτεῖν χρὴν τάφῳ προσφάγματα·
κείνη γὰρ ὤλεσέν νιν ἐς Τροίαν τ' ἄγει.

(*c*) *τόλμα τάδ'· ἡμεῖς δ' εἰ κακῶς νομίζομεν*
τιμᾶν τὸν ἐσθλόν, ἀμαθίαν ὀφλήσομεν·

(*d*) *ὦ φῶς· προσειπεῖν γὰρ σὸν ὄνομ' ἔξεστί μοι*
μέτεστι δ' οὐδὲν πλὴν ὅσον χρόνον ξίφους
βαίνω μέταξυ καὶ πυρᾶς Ἀχιλλέως.

(*e*) *ὦ φίλτατ', ἆρα ἄμ' ἐπισφαξαι τάφῳ*
δοκοῦν Ἀχαιοῖς ἦλθες; ὡς φίλ' ἂν λέγοις.
σπεύδωμεν, ἐγκονῶμεν, ἡγοῦ μοι, γέρον.

(*f*) ΑΓ. *ἦ γὰρ τιν' ἄλλον ἔτεκες ἢ κείνους, γύναι;*
ΕΚ. *ἀνόνητά γ', ὡς ἔοικε, τόνδ' ὂν εἰσορᾷς.*
ΑΓ. *ποῦ δ' ὢν ἐτύγχαν', ἡνίκ' ὤλλυτο πτόλις;*
ΕΚ. *πατήρ νιν ἐξέπεμψεν ὀρρωδῶν θανεῖν.*

2. Translate :—

(*a*) *καὶ σύ, Θρηκὶ πλαθεῖσα ξένῳ,*
λέξον, "καλεῖ σ' ἄνασσα δήποτ' Ἰλίου
Ἑκάβη, σὸν οὐκ ἔλασσον ἢ κείνης χρέος,
καὶ παῖδας, ὡς δεῖ καὶ τέκν' εἰδέναι λόγους
τοὺς ἐξ ἐκείνης." τὸν δὲ τῆς νεοσφαγοῦς
Πολυξένης ἐπίσχες, Ἀγάμεμνον, τάφον.

(*b*) *ἵζω δὲ κλίνης ἐν μέσῳ κάμψας γόνυ·*
πολλαὶ δὲ χειρὸς αἱ μὲν ἐξ ἀριστερᾶς,
αἱ δ' ἔνθεν, ὡς δὴ παρὰ φίλῳ, Τρώων κόραι
θάκους ἐχούσαι κερκίδ' Ἠδωνῖς χερός
ἥνυον, ὑπ' αὐγὰς τούσδε λεύσσουσαι πέπλους·
ἄλλαι δὲ κάμακα Θρηκίαν θεώμεναι
γυμνόν μ' ἔθηκαν διπτύχου στολίσματος.

3. Give the story on which this play is based.

FIRST YEAR.

GREEK HISTORY : THE PERSIAN WARS.

FRIDAY, APRIL 2ND :—4 to 5 P.M.

Not more than four questions to be attempted.

1. Describe the causes of the Ionian revolt, and state how it was connected with the outbreak of war between Persia and Greece.

2. Sketch the character and career of Pausanias.

3. Characterize the signal services rendered by Athens during the wars.

4. Add a *very brief* note to the following names of persons and places : Polycrates, Cleisthenes, Lade, Leonidas, Gelo, Mycale, Aristides, Aristagoras.

5. Give a brief sketch of the circumstances of the battles of Salamis and Plataea.

FIRST YEAR.

GREEK PROSE AND TRANSLATION AT SIGHT.

FRIDAY, APRIL 2ND :—2 TO 4 P. M.

A. Translate into Greek :—

1. The girl said that she herself had beautiful hands.

2. I do not think that the rulers manage well the affairs of the city.

3. You would escape if you were to ride at full speed.

4. He would have been already captured, if he were not riding at full speed.

5. He said he would give the money to me, and not to his own brother.

6. Are we to release the guilty or ought we rather to to kill them ?

7. He deliberated whither he should flee.

8. I considered that I ought to punish the orators with death, in order that they might not injure the city.

9. Those who always benefit their friends do right.

10. Those in the army said that if Cyrus were general, they would be conquering the enemy.

B. Translate into English :—

ONCE TOO OFTEN.

σατράπης τις, ἀποστὰς ἀπὸ τοῦ βασιλέως, ἐπολιορκεῖτο. δείσας δὲ μὴ τὰ σιτία αὐτῷ ἐκλείποι, ἀπέπεμψεν ἐκ τῆς πόλεως τοὺς πενεστάτους τῶν πολιτῶν· οἱ μὲν οὖν ἐξῆεσαν, μετὰ τῶν γυναικῶν καὶ τῶν παίδων, εἰς χιλίους καὶ ἑπτακοσίους. ὁ δὲ βασιλεὺς, οἰκτείρας αὐτοὺς τοῦ πάθους, ἐν τῷ ἑαυτοῦ στρατοπέδῳ ἐδέξατο πάντας φιλοφρόνως. μετὰ δὲ ταῦτα ὁ σατράπης καὶ ἄλλους ἀπέπεμψε πεντακοσίους. ὁ δὲ βασιλεὺς οὐχ ὁμοίως τούτους ἐδέξατο, ἀλλ' ἐκέλευσεν αὐτοὺς εἰσιέναι αὖθις εἰς τὴν πόλιν. "χρὴ γὰρ," ἔφη, "φιλάνθρωπον μὲν εἶναι, μαλακὸν δὲ μή."

INTERMEDIATE EXAMINATION.

THUCYDIDES (MOORE'S SELECTIONS) AND SOPHOCLES, AJAX.

FRIDAY, APRIL 9TH, 1897:—9 TO 12 A. M.

A. THUCYDIDES.

1. Translate with notes and phrases underlined:—

(*a*) Γνόντες δὲ οἱ Ἐπιδάμνιοι οὐδαμίαν σφίσιν ἀπὸ Κερκύρας τιμωρίαν ἂν οὖσαν ἐν ἀπόρῳ εἴχοντο θέσθαι τὸ παρόν· καὶ πέμψαντες ἐς Δελφοὺς τὸν θεὸν ἐπήροντο εἰ παραδοῖεν Κορινθίοις τὴν πόλιν ὡς οἰκισταῖς καὶ τιμωρίαν τινα πειρῷντ' ἀπ' αὐτῶν ποιεῖσθαι. ὁ δ' αὐτοῖς ἀνεῖλε παραδοῦναι καὶ ἡγεμονας ποιεῖσθαι. (i) Mss. have τιμωρίαν οὖσαν. (ii) εἶχον τὸ has been proposed. (iii) πορίζεσθαι has been proposed.

(*b*) ἦν δὲ ἡ γνώμη τοῦ Ἀριστέως τὸ μὲν μεθ' ἑαυτοῦ στρατόπεδον ἔχοντι ἐν τῷ ἰσθμῷ ἐπιτηρεῖν τοὺς Ἀθηναίους ἢν ἐπίωσιν, Χαλκιδέας δὲ καὶ τοὺς ἔξω ἰσθμοῦ ξυμμάχους καὶ τὴν παρὰ Περδίκκου διακοσίαν ἵππον ἐν Ὀλύνθῳ μένειν.

Explain clearly the irregularity in the case of ἔχοντι: how would you remedy it?

(*c*) τοῦ δ' αὐτοῦ χειμῶνος οἱ Ποτιδαιᾶται ἐπειδὴ οὐκέτι ἐδύναντο πολιορκούμενοι ἀντέχειν, ἀλλ' αἵ τε ἐς τὴν Ἀττικὴν ἐσβολαὶ Πελοποννησίων οὐδὲν μᾶλλον ἀπανίστασαν τοὺς Ἀθηναίους, ὅ τε σῖτος ἐπελελοίπει, καὶ ἄλλα τε πολλὰ ἐπεγεγένητο αὐτόθι ἤδη βρώσεως περὶ ἀναγκαίας, καί τινες καὶ ἀλλήλων ἐγέγευντο, οὕτω δὴ λόγους προσφέρουσι περὶ ξυμβάσεως τοῖς στρατηγοῖς τῶν Ἀθηναίων τοῖς ἐπὶ σφίσι τεταγμένοις.

(*d*) ἔστι γὰρ καὶ Ἀθηναίοις Διάσια, ἃ καλεῖται Διὸς ἑορτὴ [Μειλιχίου] μεγίστη ἔξω τῆς πόλεως, ἐν ᾗ πανδημεὶ θύουσι, πολλοὶ οὐχ ἱερεῖα ἀλλὰ θύματα ἐπιχώρια. (i) In what connexion does this passage occur. (ii) Why is Μειλιχίου considered spurious.

(*e*) ἐπεὶ δὲ ὡς ἐκ τῶν δυνατῶν ἑτοῖμα ἦν, φυλάξαντες ἔτι νύκτα καὶ περὶ αὐτὸ τὸ περίορθρον ἐχώρουν ἐκ τῶν οἰκιῶν ἐπ' αὐτούς, ὅπως μὴ κατὰ φῶς θαρσαλεωτέροις οὖσι προσφέρωνται καὶ σφίσιν ἐκ τοῦ ἴσου γίγνωνται, ἀλλ' ἐν νυκτὶ φοβερώτεροι ὄντες ἧσσους ὦσι τῆς σφετέρας ἐμπειρίας τῆς κατὰ τὴν πόλιν.

(*f*) αὖθις τὸ αὐτὸ ἕνα ἕκαστον παραγαγόντες καὶ ἐρωτῶντες εἴ τι Λακεδαιμονίους καὶ τοὺς ξυμμάχους ἀγαθὸν ἐν τῷ πολέμῳ δεδρακότες εἰσὶν, ὅποτε μὴ φαῖεν ἀπάγοντες ἀπέκτεινον καὶ ἐξαίρετον ἐποιήσαντο οὐδένα.

(*g*) ὕστερον δὲ φόρον μὲν οὐκ ἔταξαν Λεσβιοις, κλήρους δὲ ποιήσαντες τῆς γῆς πλὴν τῆς Μηθυμναίων τρισχιλίους, τριακοσίους μὲν τοῖς θεοῖς ἱέρους ἐξεῖλον, ἐπὶ δὲ τοὺς ἄλλους οφῶν αὐτῶν κληρούχους τοὺς λαχόντας ἀπέπεμψαν.

2. Translate and comment on:—

(*a*) τοῖς Κερκυραίοις τῶν εἴκοσι νεῶν ἀπὸ ἐλάσσονος πλήθους ἐκ τῆς διώξεως οὐ παρουσῶν.

(*b*) ἄνδρας ἐς κελήτιον ἐμβιβάσαντες ἄνευ κηρυκείου.

(*c*) οἰκοῦσιν ἐπὶ τῷ ἰσθμῷ τῆς Παλλήνης.

(*d*) ἀπὸ τούτου ἐναγεῖς καὶ ἀλιτήριοι τῆς θεοῦ ἐκαλοῦντο.

(*e*) διὰ δέκα δὲ ἐπάλξεων πύργοι ἦσαν μεγάλοι.

(*f*) μεῖζον μέρος νέμοντες τῷ μὴ βούλεσθαι ἀληθῆ εἶναι.

(*g*) ταλαιπώρως διὰ τοῦ πελάγους κομισθέντες αὐτοῖς ἔπρασσον ὅπως τις βοήθεια ἥξει.

B. SOPHOCLES.

1. Translate with notes on words and phrases underlined :-

(*a*) Τελαμώνιε παῖ, τῆς ἀμφιρύτου
Σαλαμῖνος ἔχων βάθρον ἀγχιάλου
σὲ μὲν εὖ πράσσοντ' ἐπιχαίρω·
σὲ δ' ὅταν πληγὴ Διὸς ἢ ζαμενὴς
λόγος ἐκ Δαναῶν κακόθρους ἐπιβῇ,
μέγαν ὄκνον ἔχω καὶ πεφόβημαι
πνοηνῆς ὡς ὄμμα πελείας.
ὡς καὶ τῆς νῦν φθιμένης νυκτὸς
μεγάλοι θόρυβοι κατέχουσ' ἡμᾶς
ἐπὶ δυσκλείᾳ, σὲ τὸν ἱππομανῆ
λειμῶν' ἐπιβάντ' ὀλέσαι Δαναῶν
βοτὰ καὶ λείαν.

Give the scheme of this metre.

(*b*) ἀλλ' ἄνα ἐζ ἑδράνων, ὅπου μακραίωνι
στηρίζει ποτὲ τᾷδ' ἀγωνίῳ σχολᾷ
ἄταν οὐρανίαν φλέγων.

(*c*) κεῖνος γὰρ ἄκρας νυκτος, ἡκίχ' ἕσπεροι
λαμπτῆρες οὐκέτ' ἦθον, ἄμφηκες λαβὼν
ἐμαίετ' ἔγχος ἐξόδους ἕρπειν κενάς

(*d*) αἶρ' αὐτὸν, αἶρε δεῦρο. ταρβήσει γὰρ οὔ
νεοσφαγῆ που τόνδε προσλεύσσων φόνον,
εἴπερ δικαίως ἔστ' ἐμὸς τὰ πατρόθεν.
ἀλλ' αὐτίκ' ὠμοῖς αὐτὸν ἐν νόμοις πατρὸς
δεῖ πωλοδαμνεῖν κἀξομοιοῦσθαι φύσιν.
ὦ παῖ γένοιο πατρὸς εὐτυχέστερος
τἀ δ' ἄλλ' ὅμοιος· καὶ γένοι' ἂν οὐ κακός.

2. Translate and comment on —

(*a*) *σπουδὴν ἔθου τήνδε.*

(*b*) *ὧδ' ᾖξεν χέρα.*

(*c*) (i) *οὐ σιγ' ἀνέζει μηδὲ δειλίαν ἀρεῖ* (other readings *ἀρῇ, ἀρῇς, ἀρεῖς*). (ii) *ἀλλ' οὐδὲ νῦν σε μὴ πάροντ' ἰδῇ πέλας.* (iii) *καὶ τἀμὰ τεύχη μήτ' ἀγωνάρχαι τινὲς θήσουσ' Ἀχαίοις μήθ' ὁ λυμεὼν ἐμός.*

(*d*) *φρονοῦντα γάρ νιν οὐκ ἂν ἐξέστην ὄκνῳ.*

(*e*) *τί δ' ἐνήλλακται τῆς ἠρεμίας νῦξ ἥδε βάρος* (v. l. *ἡμερίας*).

(*f*) *δειν' ἐπηπείλησ' ἔπη εἰ μὴ φανοίην πᾶν τὸ συντυχὸν πάθος.*

(*g*) *ὃς ἅλιον ἔβας ἑλίσσων πλάταν* (v. l. *ἐπέβας.*)

(*h*) *ποῖ τις οὖν φύγῃ ;*

(*i*) *πρέπον γε τἂν ἦν δαίμονος τοὐμοῦ τάδε.*

(*k*) *φρενὸς οἰοβώτας φίλοις μέγα πένθος ηὕρηται.*

(*l*) *νῦν, ὦ Ζεῦ, παρὰ λευκὸν εὐάμερον πελάσαι φάος θοᾶν ὠκυάλων νεῶν.*

(*m*) *εὔερόν τ' ἄγραν* (v. l. *εὔκερών τ'*).

3. Translate :—

(*a*) *οὗτοι θεατός· ἀλλά νιν περιπτυχεῖ*
φάρει καλύψω τῷδε παμπήδην, ἐπεὶ
οὐδεὶς ἄν, ὅστις καὶ φιλος, τλαίη βλέπειν
φυσῶντ' ἄνω πρὸς ῥῖνος ἔκ τε φοινίας
πληγῆς μελανθὲν αἷμ' ἀπ' οἰκείας σφαγῆς.
οἴμοι, τί δράσω ; τίς σε βαστάσει φιλων ;
ποῦ Τεῦκρος ; ὡς ἀκμαῖ' ἄν, εἰ βαίη, μόλοι,
πεπτῶτ' ἀδελφὸν τόνδε συγκαθαρμόσαι.

(*b*) *ἐκεῖνος οὔτε στεφάνων*
οὔτε βαθειᾶν κυλίκων
νεῖμεν ἐμοὶ τέρψιν ὁμιλεῖν
οὔτε γλυκὺν ἀυλῶν ὄτοβον.
κεῖμαι δ' ἀμέριμνος οὕτως
ἀεὶ πυκιναῖς δρόσοις
τεγγόμενος κόμας
λυγρᾶς μνήματα Τροίας.

4. Write briefly on the Story of Ajax, as treated by Sophocles, and the character of Ajax himself.

INTERMEDIATE EXAMINATION.

GREEK PROSE AND TRANSLATION AT SIGHT.

FRIDAY, APRIL 2ND :—2 TO 4 P. M.

A. Translate into Greek :—

A PREJUDICED OPINION.

When the Americani had revolted from the Britanni, and had established for themselves autonomy, it happened that a British ship sailed into the harbour of Phriskon. And the captain remained there many days. Now the Americani are accustomed every year to hold a festival, as having on that day obtained their freedom. And they all decorate themselves, their houses and all their possessions, and light fires and make a tumult with many loud shouts. Now the captain, knowing that this was their custom, himself also decorated his ship everywhere with every sort of colour, so that he seemed to rejoice instead of grieving at what had long ago happened. And a certain one of the

natives asked him why he did this, being a Briton and not an American. But he replied "By Zeus, you say truly that I am a Briton, and for this reason above all I rejoice, since on this day we got rid of this abominable country."

captain	ναύκληρος	*colour*	χρῶμα n.
get rid of	ἀπαλλάσσομαι	*decorate*	κοσμέω
make a tumult	θορυβέω	*abominable*	κατάρατος.

B. Translate into English :—

(i) Καὶ γὰρ βασιλεὺς αἱρεῖται, οὐχ ἵνα ἑαυτοῦ καλῶς ἐπιμελῆται, ἀλλ' ἵνα καὶ οἱ ἑλόμενοι δι' αὐτὸν εὖ πράττωσι· καὶ στρατεύονται δὲ πάντες, ἵνα ὁ βίος αὐτοῖς ὡς βέλτιστος ᾖ· καὶ στρατηγοὺς αἱροῦνται τούτου ἕνεκα, ἵνα πρὸς τοῦτο αὐτοῖς ἡγεμόνες ὦσι. Δεῖ οὖν τὸν στρατηγοῦντα τοῦτο παρασκευάζειν τοῖς ἑλομένοις αὐτὸν στρατηγόν· καὶ γὰρ οὔτε κάλλιον τούτου ἄλλο ῥᾴδιον εὑρεῖν, οὔτε αἴσχιον τοῦ ἐναντίου.

ΘΗΣΕΥΣ. (ii) ὦς πόλλ' ἁμαρτάνοντες ἄνθρωποι μάτην,
τί δὴ τέχνας μὲν μυρίας διδάσκετε
καὶ πάντα μηχανᾶσθε κἀξευρίσκετε,
ἓν δ' οὐκ ἐπίστασθ' οὐδ' ἐθηράσασθέ πω,
φρονεῖν διδάσκειν οἷσιν οὐκ ἔνεστι νοῦς ; 920
Ιππολγτος
δεινὸν σοφιστὴν εἶπας, ὅστις εὖ φρονεῖν
τοὺς μὴ φρονοῦντας δυνατός ἐστ' ἀναγκάσαι.

INTERMEDIATE EXAMINATION.

GREEK LITERATURE AND HISTORY.

FRIDAY, APRIL 2ND :—4 to 5 P.M.

Of the first five questions, not more than three to be attempted.

1. Sketch the successive periods in the development of Greek Literature.

2. Give a brief account of current views as to the origin and character of the Homeric Poems.

3. Distinguish between the two main types of Greek Lyric Poetry.

4. Describe the origin, growth and character of Attic Tragedy.

5. What do you know of Hesiod, Archilochus, Bacchylides, Arion, Mimnermus, Xenophanes, Aristophanes ?

6. Give an account of the constitution of the Confederacy of Delos, and trace its bearing on the growth of the Athenian Empire.

7. Characterize the administration of Pericles ; mention his chief measures and the objections brought against them by his opponents.

THIRD YEAR.

GREEK HISTORY, 431–338 B C. ONE HOUR.

1. Give a very short account of :—Alcibiades, Agesilaus, Iphicrates, Conon, Isocrates, Philomelus, Antiphon, Phocion, Phrynichus, Thrasybulus.

2. A brief outline of the Sicilian expedition, adding a map of the operations at Syracuse.

3. The date and site of the following battles :—Coronea, Aegospotami, Mantinea, Delium. The date of the Peace

of Antalcidas, the Revolution of the Four Hundred, the Expedition of the Ten Thousand, Death of Socrates.

4. A brief account of the constitutions of Athens and Sparta.

5. The meaning of the terms *ἀνάκρισις, ἄρχων πολέμαρχος, δίκη ἐξούλης, συκοφάντης, ἐφέται, μέτοικοι, παρανόμων γραφὴ, θεσμοθέται, σκυταλή.*

GREEK COMPOSITION AND SIGHT. Two Hours.

1. Translate into Greek :—

But I am most indignant, gentlemen, when I hear any of those along with him asserting that, if any one departed from the city, *that* is not betraying it; for our ancestors too in former times, when they were making war against Xerxes, leaving the city crossed over to Salamis. And, he is so foolish and despises us so utterly that he has had the hardihood to compare the noblest of actions with the most base. For where has the valour of those men not been admired? Who is there either so envious or so utterly destitute of spirit (*ἀφιλότιμος*), who would not pray that he had shared in their exploits (*use Participle*)? For they did not flee from their city but they changed their abode—taking wise counsel in view of the approaching danger. For Eteomius the Lacedaemonian and Adeimantus the Corinthian and the fleet of the Aeginetans were intending to secure their own safety at nightfall; but our ancestors though deserted by all the Greeks succeeded in delivering the others as well as themselves against their will—compelling them to join them in fighting at Salamis against the barbarians.

2. Translate :—

(*a*) Πῶς οὖν οὐχ ἅπασι προσήκει ὑμῖν τούτου καταψηφίζεσθαι ; εἰ γὰρ τούτων ἕκαστος δι' ἓν ἁμάρτημα θανάτου ἠξιώθη, ἦπου τοῦ γε πολλὰ ἐξημαρτηκότος καὶ δημοσίᾳ εἰς τὴν πόλιν καὶ ἰδίᾳ εἰς ἕκαστον ὑμῶν, ὧν ἑκάστου ἁμαρτήματος ἐν τοῖς νόμοις θάνατος ἡ ζημία ἐστὶ, δεῖ ὑμᾶς σφόδρα θάνατον αὐτοῦ καταψηφίσασθαι.

Λέξει δὲ, ὦ ἄνδρες δικασταὶ, καὶ ἐξαπατῆσαι ὑμᾶς πειράσεται, ὡς ἐπὶ τῶν Τετρακοσίων Φρύνιχον ἀπέκτεινε, καὶ ἀντὶ τούτου φησὶν αὐτὸν Ἀθηναῖον τὸν δῆμον ποιήσασθαι, ψευδόμενος, ὦ ἄνδρες δικασταί· οὔτε γὰρ Φρύνιχον ἀπέκτεινεν, οὔτε Ἀθηναῖον αὐτὸν ὁ δῆμος ἐποιήσατο. Φρυνίχῳ γὰρ, ὦ ἄνδρες δικασταὶ, κοινῇ Θρασύβουλός τε, ὁ Καλυδώνιος καὶ Ἀπολλόδωρος ὁ Μεγαρεὺς ἐπεβούλευσαν· ἐπειδὴ δὲ ἐπετυχέτην αὐτῷ βαδίζοντι, ὁ μὲν Θρασύβουλος τύπτει τὸν Φρύνιχον καὶ καταβάλλει πατάξας, ὁ δὲ Ἀπολλόδωρος οὐχ ἥψατο, ἀλλ' ἐν τούτῳ κραυγὴ γίγνεται, καὶ ᾤχοντο φεύγοντες. Ἀγόρατος δὲ οὑτοσὶ οὔτε παρεκλήθη οὔτε παρεγένετο οὔτε οἶδε τοῦ πράγματος οὐδέν. Ὡς δὲ ἀληθῆ λέγω, αὐτὸ ὑμῖν τὸ ψήφισμα δηλώσει.

(*b*) ΙΩ. Πόσις δὲ τίς σ' ἔγημ' Ἀθηναίων, γύναι ;
ΚΡ. Οὐκ ἀστὸς, ἀλλ' ἐπακτὸς ἐξ ἄλλης χθονός.
ΙΩ. Τίς ; εὐγενῆ νιν δεῖ πεφυκέναι τινά.
ΚΡ. Ξοῦθος, πεφυκὼς Αἰόλου Διός τ' ἄπο.
ΙΩ. Καὶ πῶς ξένος σ' ὢν ἔσχεν οὖσαν ἐγγενῆ ;
ΚΡ. Εὔβοι' Ἀθήναις ἔστι τις γείτων πόλις·
ΙΩ. Ὅροις ὑγροῖσιν, ὡς λέγουσ', ὡρισμένη.
ΚΡ. Ταύτην ἔπερσε Κεκροπίδαις κοινῷ δορί.
ΙΩ. Ἐπίκουρος ἐλθών, κἆτα σὸν γαμεῖ λέχος ;
ΚΡ. Φερνάς γε πολέμου καὶ δορὸς λαβὼν γέρας.

THIRD YEAR.

ISOCRATES AND ARISTOPHANES. Three Hours.

1. Translate :—Τοσοῦτον δ' ἀπέχουσι τῆς ἐλευθερίας καὶ τῆς αὐτονομίας, ὥσθ' αἱ μὲν ὑπὸ τυράννοις εἰσὶ, τὰς δ' ἁρμοσταὶ κατέχουσιν, ἔνιαι δ' ἀνάστατοι γεγόνασι, τῶν δ' οἱ βάρβαροι δεσπόται καθεστήκασιν· οὓς ἡμεῖς διαβῆναι τολμήσαντας εἰς τὴν Εὐρώπην καὶ μεῖζον ἢ προσῆκεν αὐτοῖς φρονήσαντας οὕτω διέθεμεν ὥστε μὴ μόνον παύσασθαι στρατείας ἐφ' ἡμᾶς ποιουμένους ἀλλὰ καὶ τὴν αὑτῶν χώραν ἀνέχεσθαι πορθουμένην.

2. Translate :—Ἔστι δ' οὐχ οἷον τ' ἀποτρέπειν τῶν ἁμαρτημάτων, οὐδ' ἑτέρων πράξεων πείθειν ἐπιθυμεῖν, ἢν μή τις ἐρρωμένως ἐπιτιμήσῃ τοῖς παροῦσιν· χρὴ δὲ κατηγορεῖν μὲν ἡγεῖσθαι τοὺς ἐπὶ βλάβῃ τοιαῦτα λέγοντας, νουθετεῖν δὲ τοὺς ἐπ' ὠφελείᾳ λοιδοροῦντας. τὸν γὰρ αὐτὸν λόγον οὐχ ὁμοίως ὑπολαμβάνειν δεῖ, μὴ μετὰ τῆς αὐτῆς διανοίας λεγόμενον.

3. Translate, adding a note where necessary :—

(α) Οὐκ ἀριστίνδην ἐπειλεγμένοι.

(β) Ὁμοίως διεπορεύθησαν ὥσπερ ἂν εἰ προπεμπόμενοι.
Of whom is the orator speaking here?

(γ) Ἀσφαλέστερον κατέβησαν τῶν περὶ φιλίας ὡς αὐτὸν πρεσβευόντων.

(δ) Οἱ δ' ἐν ταῖς μεγίσταις δόξαις ὄντες ὁμαλῶς μὲν οὐδὲ κοινῶς οὐδὲ πολιτικῶς οὐδεπώποτ' ἐβίωσαν.

(ε) Θεμιστοκλέα δ' ὃς ὑπὲρ τῆς Ἑλλάδος αὐτοὺς κατεναυμάχησε τῶν μεγίστων δωρεῶν ἠξίωσαν.

(ζ) Οὐκ ἀποροῦντες πόθεν ἐπισκευάσωσι.

(η) Ἅμα διαλλάττονται καὶ τῆς ἔχθρας τῆς γεγενημένης ἐπιλανθάνονται.

(θ) Πολλοὶ δὲ δι' ἔνδειαν τῶν καθ' ἡμέραν ἐπικουρεῖν ἀναγκάζονται.

(ι) Τίσι δὲ φθονεῖν εἰκός ἐστι τοὺς μὴ παντάπασιν ἀνάνδρως διακειμένους ἀλλὰ μετρίως τούτῳ τῷ πράγματι χρωμένους;

(κ) Δεῖ δὲ τοὺς τῶν λόγων ἀμφισβητοῦντας πρὸς μὲν τὴν παρακαταθήκην καὶ περὶ τῶν ἄλλων ὧν νῦν φλυαροῦσι παύεσθαι γράφοντας.

(λ) Δῆλον δὲ τὸ μέγεθος τῶν κακῶν τῶν γενομένων ἐκείνοις· οὐ γὰρ ἄν ποθ' οἱ λόγοι περὶ αὐτῶν τοσοῦτον χρόνον διέμειναν. Who are alluded to here?

(μ) Ἐπιθυμοῦντες σωτῆρες ἀλλὰ μὴ λυμεῶνες ἀποκαλεῖσθαι.

(ν) Οἶμαι δὲ καὶ τὸν πόλεμον θεῶν τινα συναγαγεῖν ἀγασθέντα τὴν ἀρετὴν αὐτῶν.

4. Translate:—

(α) ΧΡ. Σὺ γὰρ ἂν πορίσαι τί δύναι' ἀγαθὸν, πλὴν φῴδων ἐς βαλανείου,
καὶ παιδαρίων ὑποπεινώντων καὶ γραϊδίων κολοσυρτοῦ;
φθειρῶν τ' ἀριθμὸν καὶ κωνώπων καὶ ψυλλῶν οὐδὲ λέγω σοι
ὑπὸ τοῦ πλήθους, αἳ βομβοῦσαι περὶ τὴν κεφαλὴν ἀνιῶσιν,
ἐπεγείρουσαι καὶ φράζουσαι, πεινήσεις, ἀλλ' ἐπανίστω.
πρὸς δὲ γε τούτοις ἀνθ' ἱματίου μὲν ἔχειν ῥάκος· ἀντὶ δὲ κλίνης
στιβάδα σχοίνων κόρεων μεστὴν, ἣ τοὺς εὕδοντας ἐγείρει·
καὶ φορμὸν ἔχειν ἀντὶ τάπητος σαπρόν· ἀντὶ δὲ προσκεφαλαίου,

λίθον εὐμεγέθη πρὸς τῇ κεφαλῇ· σιτεῖσθαι δ' ἀντὶ μὲν ἄρτων
μαλάχης πτόρθους, ἀντὶ δὲ μάζης φυλλεῖ' ἰσχνῶν ῥαφανίδων,
ἀντὶ δὲ θράνου στάμνου κεφαλὴν κατεαγότος, ἀντὶ δὲ μάκτρας
φιδάκνης πλευρὰν ἐρρωγυῖαν καὶ ταύτην. ἆρά γε πολλῶν
ἀγαθῶν πᾶσιν τοῖς ἀνθρώποις ἀποφαίνω σ' αἴτιον οὖσαν;

(β) ΚΛ. Ταύτην ἐπιπιὼν ἀποτρέχων οὐκ ἂν φθάνοις;
ΕΡ. ἆρ' ὠφελήσαις ἄν τι τὸν σαυτοῦ φίλον;
ΚΛ. εἴ του δέει γ' ὢν δυνατός εἰμί σ' ὠφελεῖν.
ΕΡ. εἰ μοι πορίσας ἄρτον τιν' εὖ πεπεμμένον
δοίης καταφαγεῖν καὶ κρέας νεανικὸν
ὧν θύεθ' ὑμεῖς ἔνδον. ΚΛ. ἀλλ' οὐκ ἐκφορά.
ΕΡ. καὶ μὴν ὁπότε τι σκεύαριον τοῦ δεσπότου
ὑφέλοι', ἐγώ σ' ἂν λανθάνειν ἐποίουν ἀεί.
ΚΛ. ἐφ' ᾧ τε μετέχειν καὐτὸς, ὦ τοιχωρύχε.
ἦκεν γὰρ ἄν σοι ναστὸς εὖ πεπεμμένος.
ΕΡ. ἔπειτα τοῦτόν γ' αὐτὸς ἂν κατήσθιες.
ΚΛ. οὐ γὰρ μετεῖχες τὰς ἴσας πληγὰς ἐμοὶ,
ὁπότε τι ληφθείην πανουργήσας ἐγώ.

5. Translate, explaining, where necessary the allusion or any grammatical peculiarity:—

(α) ΧΡ. Ἀλλ' αἶρε ταχέως. ΠΛ. Μηδαμῶς.

(β) Ἦν μεθίεμεν.

(γ) Αὐτίκα γὰρ ἄρχει διὰ τίν' ὁ Ζεὺς τῶν θεῶν;

(δ) Ἐν τῇ σορῷ νονὶ λαχὸν τὸ γράμμα σου δικάζειν.

(ε) Λέγ' ἀνύσας ὅ τι φῄς ποτε.

(ζ) Καί μ' οὐκ ἀρέσκει.

(η) ΠΕ. Οὐκ ἂν φθάνοιτε τοῦτο πράττοντες τί γὰρ
ἔχοι τις ἂν δίκαιον ἀντειπεῖν ἔτι;

(θ) Σφηκώδεις.

(ι) Ἐγκατακλινοῦντ' ἄγωμεν εἰς Ἀσκληπιοῦ.

(κ) Πρῶτον δὲ πάντων τῷ Νεοκλείδῃ φάρμακον
καταπλαστὸν ἐνεχείρησε τρίβειν ἐμβαλὼν
σκορόδων κεφαλὰς τρεῖς Τηνίων. Ἔπειτ' ἔφλα
ἐν τῇ θυείᾳ συμπαραμιγνύων ὀπὸν
καὶ σχῖνον εἶτ' ὄξει διέμενος Σφηττίῳ
κατέπλασεν αὐτοῦ τὰ βλέφαρ' ἐκστρέψας, ἵνα
ὀδυνῷτο μᾶλλον.

(λ) Ἵν' ὑπομνύμενον παύσω σε τῆς ἐκκλησίας.

(μ) Ἀλλ' ἦν περὶ αὐτὸν ὄχλος ὑπερφυὴς ὅσος.

(ν) Ἐκτυπεῖτο δὲ
ἐμβὰς γερόντων εὐρύθμοις προβήμασιν.

(ο) Κἀγὼ δ' ἀναδῆσαι βούλομαι
εὐαγγέλιά σε κριβανωτῶν ὁρμαθῷ
τοιαῦτ' ἀπαγγείλαντα.

(π) Ἔα, τίς ἔσθ' ὁ προσιὼν οἰτοσί;

(ρ) Ἐὰν δὲ σύζυγον λάβω τινα
καὶ σύκινον.

(σ) Ἐφ' ᾧτ' ἐκεῖσε μηδέποτέ μ' ἐλθεῖν ἔτι.

(τ) Νηττάριον ἂν καὶ φάβιον ὑπεκορίζετο.

(υ) ΕΡ. Ἀλλ' ἡγεμόνιον. ΚΑ. Ἀλλ' ὁ θεὸς ἤδη βλέπει.

6. Explain what is meant by Ablaut and illustrate it from Greek: Shew how it throws light on the formation of Aorists like ἔσχον and ἔσπομην.

Scan the first 4 lines of 4 (β).

THIRD YEAR HONOURS.

TRANSLATION AT SIGHT (GREEK).

MONDAY, APRIL 12TH, 1897:—AFTERNOON, 2 TO 4.

1. *ἡμεῖς δὲ, οἷς ἱερὰ καὶ τάφοι προγόνων ὑπάρχουσιν ἐν τῇ πατρίδι καὶ διατριβαὶ καὶ συνήθειαι μεθ' ὑμῶν ἐλευθέριοι καὶ γάμοι κατὰ τοὺς νόμους καὶ κηδεσταὶ καὶ τέκνα, Ἀθήνησι μὲν ἦμεν ἄξιοι τῆς ὑμετέρας πίστεως, οὐ γὰρ ἄν ποτε ἡμᾶς εἵλεσθε, ἐλθόντες δ' εἰς Μακεδονίαν ἐξαίφνης ἐγκυμέθα προδόται. ὁ δὲ οὐδὲν ἄπρατον ἔχων μέρος τοῦ σώματος, οὐδ' ὅθεν τὴν φωνὴν προΐεται, ὡς ὢν Ἀριστείδης ὁ τοὺς φόρους τάξας τοῖς Ἕλλησιν, ὁ δίκαιος ἐπικαλούμενος, δυσχεραίνει καὶ καταπτύει δωροδοκίας.*

2. Τὸν δ' ἄρ' ὑπόδρα ἰδὼν προσέφη κορυθαίολος Ἕκτωρ·
Πουλυδάμα, σὺ μὲν οὐκέτ' ἐμοὶ φίλα ταῦτ' ἀγορεύεις·
οἶσθα καὶ ἄλλον μῦθον ἀμείνονα τοῦδε νοῆσαι.
Εἰ δ' ἐτεὸν δὴ τοῦτον ἀπὸ σπουδῆς ἀγορεύεις,
ἐξ ἄρα δή τοι ἐπειτα θεοὶ φρένας ὤλεσαν αὐτοί,
ὃς κέλεαι Ζηνὸς μὲν ἐριγδούποιο λαθέσθαι
βουλέων, ἅστε μοι αὐτὸς ὑπέσχετο καὶ κατένευσεν·
τύνη δ' οἰωνοῖσι τανυπτερύγεσσι κελεύεις
πείθεσθαι· τῶν οὔτι μετατρέπομ' οὐδ' ἀλεγίζω,
εἴτ' ἐπὶ δεξί' ἴωσι πρὸς Ἠῶ τ' Ἠέλιόν τε,
εἴτ' ἐπ' ἀριστερὰ τοίγε ποτὶ ζόφον ἠερόεντα.
Ἠμεῖς δὲ μεγάλοιο Διὸς πειθώμεθα βουλῇ,
ὃς πᾶσι θνητοῖσι καὶ ἀθανάτοισιν ἀνάσσει.
Εἷς οἰωνὸς ἄριστος, ἀμύνεσθαι περὶ πάτρης.

THIRD YEAR HONOURS.

GREEK PROSE.

MONDAY, APRIL 12TH:—9 TO 11 A.M.

Had the (heavy Asiatic) cavalry been at hand, the battle might have been restored; but the left wing was shattered, and the right, led by Antiochus in person, had driven before it the little division of Roman cavalry opposed to it, and had reached the Roman camp, which was with great difficulty defended from its attack. In this way the cavalry were at the decisive moment absent from the scene of action. The Romans were careful not to assail the phalanx with their legions, but sent against it archers and slingers, not one of whose missiles failed to take effect on the densely crowded mass. The phalanx nevertheless retired slowly and in good order, till the elephants stationed in the interstices became frightened and broke the ranks. Then the whole army dispersed in tumultuous flight; an attempt to hold the camp failed, and only increased the number of the dead and the prisoners. The estimate of the loss of Antiochus at 50,000 men is, considering the infinite confusion, not incredible.

THIRD YEAR HONOURS.

HOMER, ODYSSEY I AND VI: AESCHYLUS, PROMETHEUS VINCTUS.

SATURDAY, APRIL 17TH :—MORNING, 9 TO 12.

A. HOMER.

1. Translate with notes :—

(a) *τούτοισιν μὲν ταῦτα μέλει, κίθαρις καὶ ἀοιδὴ,*
ῥεῖ', ἐπεὶ ἀλλότριον βίοτον νήποινον ἔδουσιν,
ἀνέρος οὗ δή που λεύκ' ὀστέα πύθεται ὄμβρῳ
κείμεν' ἐπ' ἠπείρου, ἢ εἰν ἁλὶ κῦμα κυλίνδει.
εἰ κείνόν γ' Ἰθάκηνδε ἰδοίατο νοστήσαντα,
πάντες κ' ἀρησαίατ' ἐλαφρότεροι πόδας εἶναι
ἢ ἀφνειότεροι χρυσοῖό τε ἐσθῆτός τε.

(*b*) νηῦς δέ μοι ἥδ' ἕστηκεν ἐπ' ἀγροῦ νόσφι πόληος,
ἐν λιμένι Ῥείθρῳ, ὑπὸ Νηίῳ ὑλήεντι.

(*c*) τίς δαὶς, τίς δὲ ὅμιλος ὅδ' ἔπλετο; τίπτε δέσε χρεώ;
εἰλαπίνη ἦε γάμος; ἐπεὶ οὐκ ἔρανος τάδε γ' ἐστίν.

(*d*) μητέρα δ', εἴ οἱ θυμὸς ἐφορμᾶται γαμέεσθαι,
ἂψ ἴτω ἐς μέγαρον πατρὸς μέγα δυναμένοιο·
οἱ δὲ γάμον τεύξουσι καὶ ἀρτυνέουσιν ἔεδνα
πολλὰ μάλ' ὅσσα ἔοικε φιλης ἐπὶ παιδὸς ἔπεσθαι.

(*e*) δῶρον δ' ὅττι κέ μοι δοῦναι φίλον ἦτορ ἀνώγῃ,
αὖτις ἀνερχομένῳ δόμεναι οἰκόνδε φέρεσθαι,
καὶ μάλα καλὸν ἑλών. σοὶ δ' ἄξιον ἔσται ἀμοιβῆς.

(*f*) καὶ τὸν μὲν γραίης πυκιμηδέος ἔμβαλε χερσίν.
ἡ μὲν τὸν πτύξασα καὶ ἀσκήσασα χιτῶνα,
πασσάλῳ ἀγκρεμάσασα παρὰ τρητοῖσι λέχεσσι,
βῆ ῥ' ἴμεν ἐκ θαλάμοιο, θύρην δ' ἐπέρυσσε κορώνῃ
ἀργυρέῃ, ἐπὶ δὲ κληῖδ' ἐτάνυσσεν ἱμάντι.

(*g*) οὔτ' ἀνέμοισι τινάσσεται οὔτε ποτ' ὄμβρῳ
δεύεται οὔτε χιὼν ἐπιπίλναται, ἀλλὰ μάλ' αἴθρη
πέπταται ἀνέφελος, λευκὴ δ' ἐπιδέδρομεν αἴγλη·

(*h*) οὐκ ἔσθ' οὗτος ἀνὴρ διερὸς βροτὸς, οὐδὲ γένηται,
ὅς κεν Φαιήκων ἀνδρῶν ἐς γαῖαν ἵκηται
δηιοτῆτα φέρων· μάλα γὰρ φιλοι ἀθανάτοισιν.

(*i*) αὐτὰρ ἐπὴν πόλιος ἐπιβείομεν ἣν πέρι πύργος
ὑψηλὸς, καλὸς δὲ λιμὴν ἑκάτερθε πόληος,
λεπτὴ δ' εἰσίθμη· νῆες δ' ὁδὸν ἀμφιελισσαι
εἰρύαται· πᾶσιν γὰρ ἐπίστιόν ἐστιν ἑκάστῳ.
ἔνθα δέ τέ σφ' ἀγορὴ, καλὸν Ποσιδήιον ἀμφὶς,
ῥυτοῖσιν λάεσσι κατωρυχέεσσ' ἀραρυῖα.
ἔνθα δὲ νηῶν ὅπλα μελαινάων ἀλέγουσι,
πείσματα καὶ σπεῖρα, καὶ ἀποξύνουσιν ἐρετμά

2. Comment on :—

ἀμόθεν, διάκτορον ἀργεϊφόντην, βῆ ἀλξασα, κρητῆρας ἐπεστέψαντο ποτοῖο, ἐπαλαστήσασα, μάστιξεν ἐλάαν, ἔσταν, δήεις.

3. (*a*) Notice any differences between Homeric and Attic usage in regard to the use of the subjunctive (i) in main clauses, (ii) with relatives.

(*b*) Give examples of forms due to Ablaut.

(*c*) Under what circumstances can the article be used as a relative ?

B. AESCHYLUS.

1. Translate with notes :—

(*a*) *οὐκ ἀκούσαις ἐπεθώϋξας*
τοῦτο, Προμηθεῦ.
καὶ νῦν ἐλαφρῷ ποδὶ κραιπνόσυτον
θᾶκον προλιποῦσ', αἰθέρα θ' ἁγνὸν
πόρον οἰωνῶν, ὀκριοέσσῃ
χθονὶ τῇδε πελῶ· τοὺς σοὺς δὲ πόνους
χρῄζω διαπαντὸς ἀκοῦσαι.

(*b*) *δακρυσίστακτον ἀπ' ὄσσων*
ῥαδινῶν ῥέος παρειὰν
νοτίοις ἔτεγξε παγαῖς·

(*c*) *οἳ πρῶτα μὲν βλέποντες ἔβλεπον μάτην,*
κλύοντες οὐκ ἤκουον· ἀλλ' ὀνειράτων
ἀλίγκιοι μορφαῖσι, τὸν μακρὸν χρόνον
ἔφυρον εἰκῇ πάντα, κοὔτε πλινθυφεῖς
δόμους προσειλους ἦσαν, οὐ ξυλουργίαν·
κατώρυχες δ' ἔναιον, ὥστ' ἀήσυροι
μύρμηκες, ἄντρων ἐν μυχοῖς ἀνηλίοις.

(*d*) τρόπους δὲ πολλοὺς μαντικῆς ἐστοίχισα,
κἄκρινα πρῶτος ἐξ ὀνειράτων ἃ χρὴ
ὕπαρ γενέσθαι, κληδόνας τε δυσκρίτους
ἐγνώρισ' αὐτοῖς· ἐνοδίους τε συμβόλους
γαμψωνύχων τε πτῆσιν οἰωνῶν σκεθρῶς
διώρισ', οἵτινές τε δεξιοὶ φύσιν
εὐώνυμοί τε.

(*e*) σκιρτημάτων δὲ νήστισιν αἰκίαις
λαβρόσυτος ἦλθον, Ἥρας
ἐπικότοισι μήδεσι δαμεῖσα.

(*f*) τελος δ' ἐναργὴς βάξις ἦλθεν Ἰνάχῳ
σαφῶς ἐπισκήπτουσα καὶ μυθουμένη,
ἔξω δόμων τε καὶ πάτρας ὠθεῖν ἐμέ,
ἄφετον ἀλᾶσθαι γῆς ἐπ' ἐσχάτοις ὅροις.

Comment on infinitives.

(*g*) ἦ σοφός, ἦ σοφὸς ἦν,
ὃς πρῶτος ἐν γνώμᾳ τόδ' ἐβάστασε καὶ
γλώσσᾳ διεμυθολόγησεν,
ὡς τὸ κηδεῦσαι καθ' ἑαυτὸν ἀρι-
στεύει μακρῷ· καὶ μήτε τῶν πλούτῳ διαθρυπτομένων,
μήτε τῶν γέννᾳ μεγαλυνομένων
ὄντα χερνήταν ἐραστεῦσαι γάμων

2. Give some account of the wanderings of Io, including the prophecy of Promethus.

THIRD YEAR HONOURS.

THUCYDIDES VIII; PLATO (GORGIAS); EURIPIDES, ALCESTIS.

MONDAY, APRIL 19TH, 1897 :—MORNING, 9 TO 12.

A. THUCYDIDES.

1. Translate with notes :—

(*a*) ἐν δὲ τούτῳ τὰ Ἴσθμια ἐγίγνετο, καὶ οἱ Ἀθηναῖοι, ἐπηγγέλθησαν γάρ, ἐθεώρουν ἐς αὐτά, καὶ κατάδηλα μᾶλλον αὐτοῖς τὰ τῶν Χίων ἐφάνη· καὶ ἐπειδὴ ἀνεχώρησαν, παρεσκευάζοντο εὐθύς, ὅπως μὴ λήσουσιν αὐτοὺς αἱ νῆες ἐκ τῶν Κεγχρειῶν ἀφορμηθεῖσαι.

(*b*) ὅπου γὰρ ἔξεστιν ἐν ὑστέρῳ σαφῶς εἰδότας πρὸς ὁπόσας τε ναῦς πολεμίας καὶ ὅσαις πρὸς αὐτὰς ταῖς σφετέραις ἱκανῶς καὶ καθ' ἡσυχίαν παρασκευασαμένοις ἔσται ἀγωνίσασθαι, οὐδέποτε τῷ αἰσχρῷ ὀνείδει εἴξας ἀλόγως διακινδυνεύσειν.

(*c*) οἱ δ' ἀπὸ τῆς Σάμου Ἀθηναῖοι ἐπὶ τὴν Χίον πλέοντες τῇ στρατιᾷ καὶ αὐτοὶ ἐκ τοῦ ἐπὶ θάτερα λόφου διείργοντο καὶ καθωρμίσαντο· καὶ ἐλελήθεσαν ἀλλήλους. ἐλθούσης δὲ παρὰ Πεδαρίτου ὑπὸ νύκτα ἐπιστολῆς, ὡς Ἐρυθραίων ἄνδρες αἰχμάλωτοι ἐκ Σάμου ἐπὶ προδοσίᾳ ἐς Ἐρυθρὰς ἥκουσιν ἀφειμένοι, ἀνάγεται ὁ Ἀστύοχος εὐθὺς ἐς τὰς Ἐρυθρὰς πάλιν, καὶ παρὰ τοσοῦτον ἐγένετ' αὐτῷ μὴ περιπεσεῖν τοῖς Ἀθηναίοις.

(*d*) τούς τε καλοὺς κἀγαθοὺς ὀνομαζομένους οὐκ ἐλάσσω αὐτοὺς νομίζειν σφίσι πράγματα παρέξειν τοῦ δήμου, πορισταὶς ὄντας καὶ ἐσηγητὰς τῶν κακῶν τῷ δήμῳ, ἐξ ὧν τὰ πλείω αὐτοὺς ὠφελεῖσθαι· καὶ τὸ μὲν ἐπ' ἐκείνοις εἶναι, καὶ ἄκριτοι ἂν καὶ βιαιότερον ἀποθνήσκειν, τὸν δὲ δῆμον

σφῶν τε καταφυγὴν εἶναι καὶ ἐκείνων σωφρονιστήν. καὶ ταῦτα παρ' αὐτῶν τῶν ἔργων ἐπισταμένας τὰς πόλεις σαφῶς αὐτὸς εἰδέναι, ὅτι οὕτω νομίζουσιν.

(*e*) ὁ δὲ αὐθαδέστερόν τέ τι ἀπεκρίνατο καὶ ἠπείλησεν καὶ τῷ γε Δωριεῖ ξυναγορευοντι τοῖς ἑαυτοῦ ναύταις καὶ ἐπανήρατο τὴν βακτηρίαν. τὸ δὲ πλῆθος τῶν στρατιωτῶν ὡς εἶδον, οἷα δὴ ναῦται, ὥρμησαν ἐκραγέντες ἐπὶ τὸν Ἀστύοχον ὥστε βάλλειν· ὁ δὲ προϊδὼν καταφεύγει ἐπὶ βωμόν τινα.

(*f*) γνόντες δὲ οἱ περὶ τὸν Θρασύβουλον τὰς ἐπὶ σφίσι ναῦς ἐπεχούσας παυσάμενοι τῆς ἐπεξαγωγῆς ἤδη τοῦ κέρως καὶ ἐπαναστρέψαντες εὐθὺς ἠμύναντό τε καὶ τρέπουσιν, καὶ τὰς κατὰ τὸ νικῆσαν τῶν Πελοποννησίων μέρος ὑπολαμβάνοντες πεπλανημένας ἔκοπτόν τε καὶ ἐς φόβον τὰς πλείους ἀμαχεὶ καθίστασαν.

2. Comment on :—

(*a*) δύναμιν γὰρ ἔχων εὐθὺς ἐκασταχόσε δεινὸς παρῆν. Vat. εὐθὺς : other Mss. αὐτός.

(*b*) τὴν Πολίχναεἐντείχιζον, εἴ τι δέοι σφίσιν αὐτοῖς ἐκ τῆς νησῖδος ἐν ᾗ οἰκοῦσι πρὸς ἀναχώρησιν.

(*c*) στατῆρα Δαρεικόν.

(*d*) ἵνα μὴ αὐτῶν οἱ ναῦται ἐκ περιουσίας ὑβρίζοντες... τὰς ναῦς ἀπολείπωσιν ὑπολιπόντες ἐς ὁμηρείαν τὸν προσοφειλόμενον μισθόν. (οὐχ ὑπολιπόντες Vat.)

(*e*) ἐξὸν Πελοποινησίους, ὑφ' ὧν κακὸν οὐδέν πω πέπονθε, φίλους ποιήσασθαι.

(*f*) Εὐμολπιδῶν καὶ Κηρύκων περὶ τῶν μυστικῶν, δι' ἅπερ ἔφυγε, μαρτυρομένων καὶ ἐπιθειαζόντων.

(*g*) τῆς ἀπὸ τῶν Ἀθηναίων ὑπούλου εὐνομίας οὐ προτιμήσαντες. (Mss. τὴν (τῆς Vat.) ὑπὸ τῶν Ἀθηναίων ὕπουλον αὐτονομίαν.)

3. (*a*) Give a short account of the establishment of oligarchy at Athens and of the re-establishment of democracy. (*b*) Give a sketch-map of the coast of Asia Minor.

B. PLATO.

1. Translate with notes :—

(*a*) εἰ δ' αὖ ἔροιτο· "τὴν δὲ λογιστικὴν τίνα καλεῖς τέχνην;" εἴποιμ' ἂν ὅτι καὶ αὕτη ἐστὶ τῶν λόγῳ τὸ πᾶν κυρουμένων· καὶ εἰ ἐπανέροιτο· "ἡ περὶ τί;" εἴποιμ' ἂν ὥσπερ οἱ ἐν τῷ δήμῳ συγγραφόμενοι, ὅτι τὰ μὲν ἄλλα καθάπερ ἡ ἀριθμητικὴ ἡ λογιστικὴ ἔχει· περὶ τὸ αὐτὸ γάρ ἐστι, τό τε ἄρτιον καὶ τὸ περιττόν· διαφέρει δὲ τοσοῦτον, ὅτι καὶ πρὸς αὑτὰ καὶ πρὸς ἄλληλα πῶς ἔχει πλήθους ἐπισκοπεῖ τὸ περιττὸν καὶ τὸ ἄρτιον ἡ λογιστική.

(*b*) ἐὰν δέ γε, οἶμαι, φύσιν ἱκανὴν γένηται ἔχων ἀνήρ, πάντα ταῦτα ἀποσεισάμενος καὶ διαρρήξας καὶ διαφυγὼν καταπατήσας τὰ ἡμέτερα γράμματα καὶ μαγγανεύματα καὶ ἐπῳδὰς καὶ νόμους τοὺς παρὰ φύσιν ἅπαντας, ἐπαναστὰς ἀνεφάνη δεσπότης ἡμέτερος ὁ δοῦλος, καὶ ἐνταῦθα ἐξέλαμψεν τὸ τῆς φύσεως δίκαιον.

(*c*) οὐ γὰρ μιμητὴν δεῖ εἶναι ἀλλ' αὐτοφυῶς ὁμοῖον τούτοις, εἰ μέλλεις τι γνήσιον ἀπεργάζεσθαι εἰς φιλίαν τῇ Ἀθηναίων δήμῳ καὶ ναὶ μὰ Δία τῷ Πυριλάμπους γε πρός. ὅστις οὖν σε τούτοις ὁμοιότατον ἀπεργάσεται, οὗτός σε ποιήσει, ὡς ἐπιθυμεῖς πολιτικὸς εἶναι, πολιτικὸν καὶ ῥητορικόν· τῷ αὑτῶν γὰρ ἤθει λεγομένων τῶν λόγων ἕκαστοι χαίρουσι, τῷ δὲ ἀλλοτρίῳ ἄχθονται.

(*d*) *ἀλλὰ πολλάκις τοῦ μεγάλου βασιλέως ἐπιλαβόμενος ἢ ἄλλου ὁτουοῦν βασιλέως ἢ δυνάστου κατεῖδεν οὐδὲν ὑγιὲς ὂν τῆς ψυχῆς, ἀλλὰ διαμεμαστιγωμένην καὶ οὐλῶν μεστὴν ὑπὸ ἐπιορκιῶν καὶ ἀδικίας, ἃ ἑκάστη ἡ πρᾶξις αὐτοῦ ἐξωμόρξατο εἰς τὴν ψυχήν, καὶ πάντα σκολιὰ ὑπὸ ψεύδους καὶ ἀλαζονείας καὶ οὐδὲν εὐθὺ διὰ τὸ ἄνευ ἀληθείας τεθράφθαι.*

C. EURIPIDES.

. Translate with notes:—

(*a*) *πυλῶν πάροιθε δ' οὐχ ὁρῶ*
πηγαῖον ὡς νομίζεται
χέρνιβ' ἐπὶ φθιτῶν πύλαις.
χαίτα τ' οὔτις ἐπὶ προθύροις
τομαῖος, ἃ δὴ νεκύων
πένθει πίτνει· οὐ νεολαία
δουπεῖ χεὶρ γυναικῶν.

(*b*) *ἐχθρὰ γὰρ ἡ ἐπιοῦσα μητρυιὰ τέκνοις*
τοῖς πρόσθ', ἐχίδνης οὐδὲν ἠπιωτέρα.
καὶ παῖς μὲν ἄρσην πατέρ' ἔχει πύργον μέγαν,
σὺ δ', ὦ τέκνον μοι, πῶς κορευθήσῃ καλῶς;

(*c*) HP. *χωρὶς τό γ' εἶναι καὶ τὸ μὴ νομίζεται.*
ΑΔ. *σὺ τῇδε κρίνεις, Ἡράκλεις, κείνῃ δ' ἐγώ.*
HP. *τί δῆτα κλαίεις; τίς φίλων ὁ κατθανών;*
ΑΔ. *γυνή· γυναικὸς ἀρτίως μεμνήμεθα.*
HP. *ὀθνεῖος ἢ σοὶ συγγενὴς γεγῶσά τις;*

(*d*) *ποτῆρα δ' ἐν χείρεσσι κίσσινον λαβὼν*
πίνει μελαίνης μητρὸς εὔζωρον μέθυ,
ἕως ἐθέρμην' αὐτὸν ἀμφιβᾶσα φλὸξ
οἴνου· στέφει δὲ κρᾶτα μυρσίνης κλάδοις

ἄμουσ' ὑλακτῶν· δισσὰ δ' ἦν μέλη κλύειν·
ὃ μὲν γὰρ ᾖδε, τῶν ἐν Ἀδμήτου κακῶν
οὐδὲν προτιμῶν, οἰκέται δ' ἐκλαίομεν
δέσποιναν· ὄμμα δ' οὐκ ἐδείκνυμεν ξένῳ
τέγγοντες· Ἄδμητος γὰρ ὧδ' ἐφίετο.

(*e*) ΧΟ. ἐγὼ καὶ διὰ μούσας
καὶ μετάρσιος ἦξα, καὶ
πλείστων ἁψάμενος λόγων
κρεῖσσον οὐδὲν Ἀνάγκας
ηὗρον, οὐδέ τι φάρμακον
Θρῄσσαις ἐν σανίσιν, τὰς
Ὀρφεία κατέγραψεν
γῆρυς, οὐδ' ὅσα Φοῖβος Ἀ-
σκληπιάδαις ἔδωκε
φάρμακα πολυπόνοις
ἀντιτεμὼν βροτοῖσιν.

THIRD YEAR HONOURS.

GREEK HISTORY AND LITERATURE.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

1. Describe the growth of the jury system at Athens, and trace the gradual increase of power of the juries, especially in regard to legislation.

2. What do you know of the employment of mercenaries in Greek History? Indicate the effects of the system.

3. "The Athenian Empire rested upon a radically insecure basis." Criticize this dictum in the light of the historical facts.

4. (*a*) Write a short life of Cimon.
(*b*) Give an outline map of the Athenian Empire at the time of its greatest extent, showing administrative divisions.

5. Discuss the advantages and disadvantages of election by lot.

6. Give a short account of the origin and development of the Greek drama, note any features in the matured drama of *e.g.* Sophocles which can only be accounted for in this way.

7. What do you know of Tyrtaeus, Sappho, Bion, Isaeus, Herondas, Callimachus, Cratinus? Give approximate dates.

8. Can we trace any correspondence between the character of the literature of a given epoch and the contemporary history?

B.A. ORDINARY.

GENERAL PAPER.

WEDNESDAY, APRIL 14TH:—AFTERNOON.

1. Describe the Athenian methods of raising revenue, and give a map showing the regions into which the Athenian Empire was divided. What were the "Liturgies"?

2. Describe in detail the processes of litigation at Athens, giving technical terms. Give as many as you can of the forms of criminal prosecution in Athens.

3. Give a sketch of the different stages through which the Athenian constitution passed, giving dates.

4. Show how far the fall of the Athenian Empire was due to the character of the Athenian people themselves. Can we explain the success of Philip in the same way?

5. "To an Athenian a new play stood on much the same footing as a new novel to the citizen of to-day." Criticize this.

B.A. ORDINARY.

GREEK..... ..... { *Plutarch, Life of Demosthenes.* / *Aeschylus, Persae.*

WEDNESDAY, APRIL 14TH, 1897:—MORNING, 9 TO 12.

1. Translate:—

Οὐ μὴν ἀλλ' ἐπεὶ Φίλιππος, ὑπὸ τῆς περὶ τὴν Ἀμφισσαν εὐτυχίας ἐπαιρόμενος, εἰς τὴν Ἐλάτειαν ἐξαίφνης ἐνέπεσε, καὶ τὴν Φωκίδα κατέσχεν, ⌜ἐκπεπληγμένων τῶν Ἀθηναίων καὶ μηδενὸς ⌝τολμῶντος ἀναβαίνειν ἐπὶ τὸ βῆμα, μηδ' ἔχοντος ὅ τι χρὴ λέγειν, ἀλλ' ἀπορίας οὔσης

ἐν μέσῳ καὶ σιωπῆς, παρελθὼν μόνος ὁ Δημοσθένης, συνεβούλευε τῶν Θηβαίων ἔχεσθαι· καὶ τἄλλα παραθαῤῥύνας καὶ μετεωρίσας, ὥσπερ εἰώθει, τὸν δῆμον ταῖς ἐλπίσιν, ἀπεστάλη πρεσβευτὴς μεθ' ἑτέρων εἰς Θήβας. Ἔπεμψε δὲ καὶ Φίλιππος, ὡς Μαρσύας φησὶν, Ἀμύνταν μὲν καὶ Κλέαρχον, Μακδόνας, Δάοχον καὶ Θρασυδαῖον, Θεσσαλοὺς, ἀντεροῦντας.

(*a*) Write a note on the events mentioned in this chapter. Give the geographical position of Amphissa and Elatea. *μηδενός*—remark on this and similar usages of *μή* in Plutarch. Account for the case of *τῶν Θηβαίων*.

2. Translate and comment on :—

(*a*) Ὁ δὲ Δημοσθένης ὁμόσε χωρῶν εἰσήνεγκε ψήφισμα τὴν ἐξ Ἀρείου πάγου βουλὴν ἐξετάσαι τὸ πρᾶγμα καὶ τοὺς ἐκείνῃ δόξαντας ἀδικεῖν δοῦναι δίκην.

(*b*) ὅτε καί φησιν αὐτὸν ὁ Μάγνης Δημήτριος ἀνατείναντα τὰς χεῖρας μακαρίσαι τῆς ἡμέρας ἐκείνης ἑαυτόν, ὡς βέλτιον Ἀλκιβιάδου κατίοντα· πεπεισμένους, ὑπ' αὐτοῦ δέχεσθαι τοὺς πολίτας.

(*c*) ὡς Ἀντίπατρος καὶ κρατερὸς ἠγγέλλοντο προσιόντες ἐπὶ τὰς Ἀθήνας, οἱ μὲν περὶ τὸν Δημοσθένην φθάσαντες ὑπερξῆλθον ἐκ τῆς πόλεως, ὅ δὲ δῆμος αὐτῶν θάνατον κατέγνω Δημάδου γράψαντος.

3. What were the chief sources of information for the life of Demosthenes accessible to Plutarch? Write a note on Demosthenes' political career.

4. Translate :—

(*a*) ταῦτά μοῦ μελαγχίτων
φρὴν ἀμύσσεται φόβῳ,

ὀὰ Περσικοῦ στρατεύματος
τοῦδε, μὴ πόλις πύθη-
ται κένανδρον μέγ' ἄστυ Σουσίδος·
καὶ τὸ Κισσίων πόλισμ'
ἀντίδουπον ἐσσεται,
ὀὰ τοῦτ' ἔπος γυναικοπλη-
θὴς ὅμιλος ἀπύων·
βυσσίνοις δ' ἐν πέπλοις πέσῃ λακίς.

(1) What is the construction of στρατεύματος? (2) Distinguish between πόλις and ἄστυ. (3) Remark on the construction of μὴ πόλις... ἔσσεται... πέσῃ. (4) Derive μελαγχίτων. (5) Determine the metre of these lines.

(b) Translate :—

ΑΓ. πλήθους μὲν ἂν σάφ' ἴσθ' ἕκατι βαρβάρου
ναυσὶν κρατῆσαι. καὶ γὰρ Ἕλλησιν μὲν ἦν
ὁ πᾶς ἀριθμὸς ἐς τριακάδας δέκα
ναῶν, δεκὰς δ' ἦν τῶνδε χωρὶς ἔκκριτος·
Ξέρξῃ δὲ, καὶ γὰρ οἶδα, χιλιὰς μὲν ἦν
ὧν ἦγε πλῆθος, αἱ δ' ὑπέρκομποι τάχει
ἑκατὸν δὶς ἦσαν ἑπτά θ'· ὧδ' ἔχει λόγος.
μή σοι δοκοῦμεν τῇδε λειφθῆναι μάχῃ ;
ΑΤ. ἀλλ' ὧδε δαίμων τὶς κατέφθειρε στρατὸν,
τάλαντα βρίσας οὐκ ἰσορρόπῳ τύχῃ.

(1) How does Aeschylus' statement as to the number of ships agree with that of Herodotus and other Greek writers? (2) ὧ δ' ἔχει λόγος : give the Latin equivalent. (3) Write down the scheme of the metre in which these lines are written.

(c) Translate :—

ΞΕ. ἰὼ, δύστηνος ἐγὼ στυγερᾶς μοίρας
τῆσδε κυρήσας ἀτεκμαρτοτάτης,

ὡς ὠμοφρόνως δαίμων ἐνέβη
Περσῶν γενεᾷ· τί πάθω τλήμων;
λέλυται γὰρ ἐμῶν γυίων ῥώμη
τήνδ' ἡλικίαν ἐσιδόντ' ἀστῶν.
εἶθ' ὄφελε, Ζεῦ, κἀμὲ μετ' ἀνδρῶν
τῶν οἰχομένων
θανάτου κατὰ μοῖρα καλύψαι.

XO. ὀτοτοῖ, βασιλεῦ, στρατιᾶς ἀγαθῆς
καὶ Περσονόμου τιμῆς μεγάλης,
κόσμου τ' ἀνδρῶν,
οὓς νῦν δαίμων ἐπέκειρεν.

(1) Account for the case of *μοίρας*, the mood of *πάθω* the construction of *εἶθ' ὄφελε*, and of *ἐσιδόντ'*. (2) Describe the metre of this extract, and scan the last four lines.

5. Explain :—

(*a*) The forms *σοῦνται*, *ναμερτῆ*.

(*b*) *ἐλειοβάται*: *λόγχης ἄκμονες*: *μονόζυξ*.

(*c*) *θνμόμαντις*: *ποῦ χθονός*: *ἀδοβάται*.

(*d*) *ἀλλ' ἐμοὶ δοκεῖν τάχ' εἴσει πάντα ναμερτῆ λογον*
τοῦδε γὰρ δράμημα φωτὸς Περσικὸν πρέπει μαθεῖν,
καὶ φέρει σαφές τι πρᾶγος ἐσθλὸν ἢ κακὸν κλύειν.

(*e*) *ἐντδαυθα πέμπει τούσδ' ὅπως ὅτ' ἂν νεῶν*
φθαρέντες ἔχθροὶ νῆσον ἐκσωζοίατο,
κτείνοιεν εὐχείρωτον Ἑλλήνων στρατὸν,
φίλους δ' ὑπεκσώζοιεν ἐναλίων πόρων.

6. (*a*) Why was the *Πέρσαι* so called? When was this play first brought out, and how many years after the battle of Salamis? (*b*) Define the terms *parodos*, *stasimon*, as parts of a Greek drama. (*c*) Wherein does Aeschylus' account of the return of Xerxes differ form that of Herodotus. Discuss this point.

B.A. ORDINARY.

GREEK.

GREEK PROSE COMPOSITION AND TRANSLATION AT SIGHT.

WEDNESDAY, APRIL 14TH.—AFTERNOON, 2 TO 4.

I. Translate into Greek:—

(*a*) The Thebans on hearing these pleadings, decided that he had only suffered the fate which he deserved. His own countrymen, however, conveyed away the body with the honours due to a brave and good man, and buried him in the market place, where they still pay pious reverence to his memory, as "a founder of the State." So strictly, it would seem, do the mass of mankind confine the term brave and good to those who are benefactors of themselves.

(*b*) The ambassadors of the Boeotians were then summoned, and, being asked to explain the object of their coming, made no further mention of the word "peace," but replied that, if there was nothing to hinder it, they wished to have a pass to their own soldiers within the capital. The King answerred with a smile: "I know your desire is not so much to see your soldiers as to feast your eyes on the good fortune of your friends. Wait then, I will conduct you myself: with me you will be better able to discover what has taken place." And he was as good as his word. Next day he sacrificed, and led his army up to the gates of Corinth.

II. Translate into English:—

(*a*) *Χαλεπὸν μὲν ἴσως ἐστὶ τοὺς ἐν τοῖς τοιούτοις ὄντας πάθεσι παραμυθεῖσθαι· τὰ γὰρ πένθη οὔτε λόγῳ οὔτε νόμῳ κιμίζεται, ἀλλ' ἡ φύσις ἑκάστου καὶ φιλία πρὸς τὸν*

τελευτήσαντα τὸν ὁρισμὸν ἔχει τοῦ λυπεῖσθαι. Θμως δὲ χρὴ θαρρεῖν καὶ τῆς λύπης παραιρεῖν εἰς τὸ ἐνδεχόμενον καὶ μεμνῆσθαι μὴ μόνον τοῦ θανάτου τῶν τετελευτηκότων ἀλλὰ καὶ τῆς ἀρετῆς ἧς καταλελοίπασιν. Εἰ δὲ γήρως θνητοῦ μὴ μετέσχον ἀλλ' εὐδοξίαν ἀγήρατον εἰλήφασιν εὐδαίμονές τε γεγόνασι κατὰ πάντα. Ὅσοι μὲν γὰρ αὐτῶν ἄπαιδες τετελευτήκασιν οἱ παρὰ τῶν Ἑλλήνων ἔπαινοι παῖδες αὐτῶν ἀθάνατοι ἔσονται. Ὅσοι δὲ παῖδας καταλελοίπασιν ἡ τῆς πατρίδος εὔνοια ἐπίτροπος αὐτοῖς τῶν παίδων καταστήσεται, Πρὸς δὲ τούτοις εἰ μέν ἐστι τὸ ἀποθανεῖν ὅμοιον τῷ μὴ γενέσθαι, ἀπηλλαγμένοι εἰσὶ νόσων καὶ λύπης καὶ τῶν ἄλλων τῶν προσπιπτόντων εἰς τὸν ἀνθρώπινον βίον. Εἰ δ' ἐστὶν αἴσθησις ἐν Ἅιδου καὶ ἐπιμέλεια παρὰ τοῦ δαιμονίου, ὥσπερ ὑπολαμβάνομεν, εἰκὸς τοὺς ταῖς τιμαῖς τῶν θεῶν καταλυομέναις βοηθήσαντας πλείστης κηδεμονίας ὑπὸ τοῦ δαιμονίου τυγχάνειν.

B. A. HONOURS.

AESCHYLUS, AGAMEMNON.

WEDNESDAY, APRIL 7TH :—MORNING, 9 TO 12.

1. Translate with notes :—

(α) εὖτ' ἂν δὲ νυκτίπλαγκτον ἔνδροσόν τ' ἔχω
εὐνὴν ὀνείροις οὐκ ἐπισκοπουμένην
ἐμήν,—φόβος γὰρ ἀνθ' ὕπνου παραστατεῖ,
τὸ μὴ βεβαίως βλέφαρα συμβαλεῖν ὕπνῳ·—
ὅταν δ' ἀείδειν ἢ μινύρεσθαι δοκῶ,
ὕπνου τόδ' ἀντίμολπον ἐντέμνων ἄκος,
κλαίω τότ' οἶκου τοῦδε συμφορὰν στένων,
οὐχ ὡς τὰ πρόσθ' ἄριστα διαπονουμένου.

(*b*) ἔτι γὰρ θεόθεν καταπνείει
πειθώ, μολπᾶν
ἀλκάν, σύμφυτος αἰών,
ὅπως Ἀχαιῶν δίθρονον κράτος, Ἑλλάδος ἥβας
ξύμφρονα τάγαν,
πέμπει ξὺν δορὶ καὶ χερὶ πράκτορι
θούριος ὄρνις Τευκρίδ' ἐπ' αἶαν,
οἰωνῶν βασιλεὺς βασιλεῦσι νεῶν, ὁ κελαινός, ὅ τ'
ἐξόπιν ἀργᾶς,
φανέντες ἴκταρ μελάθρων, χερὸς ἐκ δοριπάλτου,
παμπρέπτοις ἐν ἕδραισι,
βοσκόμενοι λαγίναν, ἐρικύμονα φέρματα, γένναν,
βλαβέντα λοισθίων δρόμων.
αἴλινον αἴλινον εἰπέ, τὸ δ' εὖ νικάτω.
κεδνὸς δὲ στρατόμαντις ἰδὼν δύο λήμασιν ἴσους
Ἀτρεΐδας μαχίμους ἐδάη λαγοδαίτας
πομπούς τ' ἀρχάς·

(i) μολπάν Mss. (ii) τὰν γᾶν M. (iii) ἐρικύματα φέρματι M. (iv) λήμασι δισσούς.

(*c*) στάζει δ' ἔν θ' ὕπνῳ πρὸ καρδίας
μνησιπήμων πόνος· καὶ παρ' ἄ-
κοντας ἦλθε σωφρονεῖν.
δαιμόνων δέ που χάρις βίαιος,
σέλμα σεμνὸν ἡμένων.

(*d*) λιτὰς δὲ καὶ κληδόνας πατρῴους
παρ' οὐδὲν αἰῶνα παρθένειόν τ'
ἔθεντο φιλόμαχοι βραβῆς,
φράσεν δ' ἀόζοις πατὴρ μετ' εὐχάν,
δίκαν χιμαίρας ὕπερθε βωμοῦ
πέπλοισι περιπετῆ,
παντὶ θυμῷ προνωπῆ

λαβεῖν ἀέρδην, στόματός τε καλλιπρῴρου φυλακᾷ
κατασχεῖν
φθόγγον ἀραῖον οἴκοις,
βίᾳ χαλινῶν τ' ἀναύδῳ μένει.

(i) παρθένειον (without τ') Mss. (ii) φυλακάν Mss.

(e) ΚΛ. Ἥφαιστος Ἴδης λαμπρὸν ἐκπέμπων σέλας.
φρυκτὸς δὲ φρυκτὸν δεῦρ' ἀπ' ἀγγάρου πυρὸς
ἔπεμπεν· Ἴδη μὲν πρὸς Ἑρμαῖον λέπας
Λήμνου· μέγον δὲ πανὸν ἐκ νήσου τρίτον
Ἄθωον αἶπος Ζηνὸς ἐξεδέξατο,
ὑπερτελής τε, πόντον ὥστε νωτίσαι,
ἰσχὺς πορευτοῦ λαμπάδος πρὸς ἡδονὴν
πέμπει τὸ χρυσοφεγγὲς ὥς τις ἥλιος
σέλας παραγγειλασα Μακίστου σκοπαῖς·

(i) ἀγγέλου Mss. (ii) πεύκη Mss. (iii) σκοπάς Mss.

(f) ξυνώμοσαν γάρ, ὄντες ἔχθιστοι τὸ πρίν,
πῦρ καὶ θάλασσα, καὶ τὰ πίστ' ἐδειξάτην,
φθείροντε τὸν δύστηνον Ἀργείων στρατόν.
ἐν νυκτὶ δυσκύμαντα δ' ὠρώρει κακά.
ναῦς γὰρ πρὸς ἀλλήλαισι Θρῃκίαι πνοαῖ
ἤρεικον· αἱ δὲ κεροτυπούμεναι βίᾳ
χειμῶνι τυφῷ σὺν ζάλῃ τ' ὀμβροκτύπῳ
ᾤχοντ' ἄφαντοι, ποιμένος κακοῦ στρόβῳ.
ἐπεὶ δ' ἀνῆλθε λαμπρὸν ἡλίου φάος,
ὁρῶμεν ἀνθοῦν πέλαγος Αἰγαῖον νεκροῖς
ἀνδρῶν Ἀχαϊῶν ναυτικοῖς τ' ἐρειπίοις.
Mss. ναυτικῶν τ' ἐριπίων.

(g) ΚΑ. ἒ ἔ, παπαῖ παπαῖ, τί τόδε φαίνεται;
ἦ δίκτυόν τι Ἄιδου;
ἀλλ' ἄρκυς ἥ ξύνεννος, ἥ ξυναιτία
φόνου. στάσις δ' ἀκόρετος γένει
κατολολυξάτω θύματος λευσίμου.

ΧΟ. ποίαν Ἐρινὺν τήνδε δώμασιν κέλει
ἐπορθιάζειν; οὔ με φαιδρύνει λόγος.
ἐπὶ δὲ καρδίαν ἔδραμε κροκοβαφὴς
σταγών, ἅτε καιρία πτώσιμος
ξυνανύτει βίου δύντος αὐγαῖς.

(*h*) ΧΟ. ὄνειδος ἥκει τόδ' ἀντ' ὀνείδους.
δύσμαχα δ' ἐστὶ κρῖναι.
φέρει φέροντ', ἐκτίνει δ' ὁ καίνων
μίμνει δὲ μίμνοντος ἐν θρόνῳ Διὸς
παθεῖν τὸν ἔρξαντα. θέσμιον γάρ·
τίς ἂν γονὰν ἀραῖον ἐκβάλοι δόμων;
κεκόλληται γένος πρὸς ἄτᾳ.

2. Comment on :—

(*a*) τὰ δεσποτῶν γὰρ εὖ πεσόντα θήσομαι.
(*b*) οἵ τ' ἐκπατίοις ἄλγεσι παίδων
ὕπατοι λεχέων στροφοδινοῦνται.
(*c*) γόνατος κονίαισιν ἐρειδομένου
διακναιομένης τ' ἐν προτελείοις κάμακος.
(*d*) τῶν τ' οὐρανίων τῶν τ' ἀγοραίων.
(*e*) τορὸν γὰρ ἦξει σύνορθρον αὐγαῖς (συνορθὸν αὐταῖς Mss.)
(*f*) νικᾷ δ' ὁ πρῶτος καὶ τελευταῖος δραμών.
(*g*) καὶ τῶν ἁλόντων καὶ κρατησάντων δίχα
φθόγγας ἀκούειν ἐστὶ συμφορᾶς διπλῆς.
(*h*) πάρεστι σιγὰς ἀτίμους ἁλοιδόρους
αἴσχιστ' ἀφειμένων ἰδεῖν.
(σιγᾶσ' ἄτιμος ἁλοίδορος ἄδιστος ἀφεμένων Mss.)
(*i*) ΧΟ. κῆρυξ Ἀχαιῶν χαῖρε τῶν ἀπὸ στρατοῦ
ΚΗ. χαίρω γε· τεθνάναι δ' οὐκ ἔτ' ἀντερῶ θεοῖς
(χαίρω· τεθνᾶναι δ' οὐκ ἀντερῶ θεοῖς Mss.)
(*k*) λέγουσιν ἡμᾶς ὡς ὀλωλότας.
(*l*) τοιοῖσδε τοι νιν ἀξιῶ προσφθέγμασιν
(*m*) εἰ πάντα δ' ὡς πράσσοιμ' ἄν, εὐθαρσὴς ἐγώ.

(*n*) χρόνος δ' ἐπὶ πρυμνησίων ξυνεμβολαῖς ψαμμίας ἀκάτας παρήβησεν.
(i) ἐπεί Mss. (ii) ἀκάτα Mss.
(*o*) ἄξειν νιν ὑπτίασμα κειμένου πατρός.
(*p*) τοῦ δρῶντος ἐστὶ καὶ τὸ βουλεῦσαι πέρι.
(*q*) τελεον νεαροῖς ἐπιθύσας.

3. Discuss :—(*a*) The Mss. which are our authority for this play. (*b*) The plot, especially in relation to the Homeric accounts of Agamemnon's death.

B. A. HONOURS.

GREEK PROSE.

Monday, April 12th :—Morning, 9 to 11 a.m.

In a democracy, where the right of making laws resides in the people at large, public virtue, or goodness of intention, is more likely to be found, than either of the other qualities of government. Popular assemblies are frequently foolish in their contrivance, and weak in their execution; but generally mean to do the thing that is right and just, and have always a degree of patriotism or public spirit. In aristocracies there is more wisdom to be found than in the other frames of government, being composed or intended to be composed of the most experienced citizens: but there is less honesty than in a republic and less strength than a monarchy. A monarchy is, indeed, the most powerful of any; for by the entire conjunction of the legislative and executive powers all the sinews of government are knit together, and united in the hand of the prince: but then there is imminent danger of his employing that strength to improvident or oppressive purposes.

Sir W. Blackstone.

B. A. HONOURS.

TRANSLATION AT SIGHT (GREEK).

MONDAY, APRIL 12TH, 1897:—AFTERNOON, 2 TO 4.

1. δοκεῖ δέ μοι καὶ ἐς Καρχηδόνα ἄμεινον εἶναι πέμψαι. οὐ γὰρ ἀνελπιστον αὐτοῖς, ἀλλ' ἀεὶ διὰ φόβου εἰσὶ μή ποτε Ἀθηναῖοι αὐτοῖς ἐπὶ τὴν πόλιν ἔλθωσιν, ὥστε τάχ' ἂν ἴσως νομίσαντες, εἰ τάδε προήσονται, κἂν σφεῖς ἐν πόνῳ εἶναι, ἐθελήσειαν ἡμῖν ἤτοι κρύφα γε ἢ φανερῶς, ἢ ἐξ ἑνός γέ του τρόπου, ἀφῦναι. δυνατοὶ δέ εἰσι μάλιστα τῶν νῦν, βουληθέντες· χρυσὸν γὰρ καὶ ἄργυρον πλεῖστον κέκτηνται, ὅθεν ὅ τε πόλεμος καὶ τἆλλα εὐπορεῖ.

2. ΔΗ. τρισσαί μ' ἀναγκάζουσι συμφορᾶς ὁδοὶ,
Ἰόλαε, τούσδε μὴ παρώσασθαι ξένους·
τὸ μὲν μέγιστον Ζεὺς, ἐφ' οὗ σὺ βώμιος
θακεῖς νεοσσῶν τήνδ' ἔχων παγήγυριν,
τὸ συγγενές τε καὶ τὸ προὐφειλειν καλῶς
πράσσειν παρ' ἡμῶν τούσδε πατρῴαν χάριν,
τό τ' αἰσχρὸν, οὗπερ δεῖ μάλιστα φροντίσαι·
εἰ γὰρ παρήσω τόνδε συλᾶσθαι βίᾳ
ξένου πρὸς ἀνδρὸς βωμὸν, οὐκ ἐλευθέραν
οἰκεῖν δοκήσω γαῖαν Ἀργείοις δ' ὄκνῳ
ἱκέτας προδοῦναι· καὶ τόδ' ἀγχόνης πέλας.

3. Τούτων τοι χάριν, ἣν δ' ἐγώ, καὶ ταῦτα προορώμενοι ἡμεῖς τότε καὶ δεδιότες ὅμως ἐλέγομεν, ὑπὸ τἀληθοῦς ἠναγκασμένοι, ὅτι οὔτε πόλις οὔτε πολιτεία οὐδέ γ' ἀνὴρ ὁμοίως μή ποτε γένηται τελεος, πρὶν ἂν τοῖς φιλοσόφοις τούτοις τοῖς ὀλίγοις καὶ οὐ πονηροῖς, ἀχρήστοις δὲ νῦν κεκλημένοις, ἀνάγκη τις ἐκ τύχης παραβάλῃ, εἴτε βούλονται εἴτε μή, πόλεως ἐπιμεληθῆναι καὶ τῇ πόλει κατήκοοι γενέσθαι, ἢ τῶν νῦν ἐν δυναστείαις ἢ βασιλείαις ὄντων υἱέσιν η αὐτοῖς ἔκ τινος θείας ἐπιπνοίας ἀληθινῆς φιλοσοφίας ἀληθινὸς ἔρως ἐμπέσῃ.

B. A. HONOURS.

HERODOTUS VII; PLATO, (SELECTIONS); ARISTOTLE, ETHICS I, II, X, AND POETICS.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

A. HERODOTUS.

1. Translate with notes:—

(*a*) Ἄνδρες Πέρσαι, συγγνώμην μοι ἔχετε, ὅτι ἀγχίστροφα βουλεύομαι. φρενῶν τε γὰρ ἐς τὰ ἐμεωυτοῦ πρῶτα οὔ κω ἀνήκω, καὶ οἱ παρηγορεύμενοι κεῖνα ποιέειν, οὐδένα χρόνον μευ ἀπέχονται. ἀκούσαντι μέντοι μοι τῆς Ἀρταβάνου γνώμης, παραυτίκα μὲν ἡ νεότης ἐπέζεσε, ὥστε ἀεικέστερα ἀπορρίψαι ἔπεα ἐς ἄνδρα πρεσβύτερον ἢ χρεόν.

(*b*) Οἱ δὲ στρατευόμενοι, οἵδε ἦσαν. Πέρσαι μὲν, ὧδε ἐσκευασμένοι· περὶ μὲν τῇσι κεφαλῇσι εἶχον τιάρας καλεομένους, πίλους ἀπαγέας· περὶ δὲ τὸ σῶμα, κιθῶνας χειριδωτοὺς ποικίλους, λεπίδος σιδηρέης ὄψιν ἰχθυοειδέος· περὶ δὲ τὰ σκέλεα, ἀναξυρίδας· ἀντὶ δὲ ἀσπίδων, γέρρα. ὑπὸ δὲ, φαρετρεῶνες ἐκρέμαντο· αἰχμὰς δὲ βραχέας εἶχον, τόξα δὲ μεγάλα, ὀϊστοὺς δὲ καλαμίνους· πρὸς δὲ, ἐγχειρίδια παρὰ τὸν δεξιὸν μηρὸν παραιωρεύμενα ἐκ τῆς ζώνης.

(*c*) αὐτοὶ δὲ, ἐμεῦ πρότερον δεηθέντος βαρβαρικοῦ στρατοῦ συνεπάψασθαι, ὅτε μοι πρὸς Καρχηδονίους νεῖκος συνῆπτο, ἐπισκήπτοντός τε τὸν Δωριέος τοῦ Ἀναξανδρίδεω πρὸς Ἐγεσταίων φόνον ἐκπρήξασθαι, ὑποτεινόντός τε τὰ ἐμπόρια συνελευθεροῦν, ἀπ' ὧν ὑμῖν μεγάλαι ὠφελίαι τε καὶ ἐπαυρέσιες γεγόνασι· οὔτε ἐμεῦ εἵνεκα ἤλθετε βοηθήσοντες, οὔτε τὸν Δωριέος φόνον ἐκπρηξόμενοι· τὸ δὲ κατ' ὑμέας, τάδε ἅπαντα ὑπὸ βαρβάροισι νέμεται.

(*d*) ὡρμέατο δὲ περὶ λύχνων ἁφὰς ἐκ τοῦ στρατοπέδου. Τὴν δὲ ἀτραπὸν ταύτην ἐξεῦρον μὲν οἱ ἐπιχώριοι Μηλιέες. ἐξευρόντες δὲ, Θεσσαλοῖσι κατηγήσαντο ἐπὶ Φωκέας τότε

ὅτε οἱ Φωκέες, φράξαντες τείχεϊ τὴν ἐσβολὴν, ἦσαν ἐν σκέπῃ τοῦ πολέμου· ἔκ τε τόσου δὴ κατεδέδεκτο ἐοῦσα οὐδὲν χρηστὴ Μηλιεῦσι.

2. Give a description of Xerxes' bridge over the Hellespont.

B. PLATO.

1. Translate with notes :—

(*a*) καὶ γὰρ αὕτη ἡ λίθος οὐ μόνον αὐτοὺς τοὺς δακτυλίους ἄγει τοὺς σιδηροῦς, ἀλλὰ καὶ δύναμιν ἐντίθησι τοῖς δακτυλίοις ὥστ' αὖ δύνασθαι ταὐτὸν τοῦτο ποιεῖν ὅπερ ἡ λίθος, ἄλλους ἄγειν δακτυλίους, ὥστ' ἐνίοτε ὁρμαθὸς μακρὸς πάνυ σιδηρῶν δακτυλίων ἐξ ἀλλήλων ἤρτηται· πᾶσι δὲ τούτοις ἐξ ἐκείνης τῆς λίθου ἡ δύναμις ἀνήρτηται. οὕτω δὲ καὶ ἡ Μοῦσα ἐνθέους μὲν ποιεῖ αὐτή, διὰ δὲ τῶν ἐνθέων τούτων ἄλλων ἐνθουσιαζόντων ὁρμαθὸς ἐξαρτᾶται.

(*b*) Οὐκοῦν ἀνάγκη, ἔφη, ἐκ πάντων τούτων παρίστασθαι δόξαν τοιάνδε τινὰ τοῖς γνησίως φιλοσόφοις, ὥστε καὶ πρὸς ἀλλήλους τοιαῦτ' ἄττα λέγειν, ὅτι Κινδυνεύει τοι ὥσπερ ἀτραπός τις ἡμᾶς ἐκφέρειν μετὰ τοῦ λόγου ἐν τῇ σκέψει, ὅτι, ἕως ἂν τὸ σῶμα ἔχωμεν καὶ ξυμπεφυρμένη ᾖ ἡμῶν ἡ ψυχὴ μετὰ τοῦ τοιούτου κακοῦ, οὐ μή ποτε κτησώμεθα ἱκανῶς οὗ ἐπιθυμοῦμεν· φαμὲν δὲ τοῦτο εἶναι τὸ ἀληθές.

(*c*) εἰ οὖν ἴδοιεν καὶ νῷ καθάπερ τοὺς πολλοὺς ἐν μεσημβρίᾳ μὴ διαλεγομένους ἀλλὰ νυστάζοντας καὶ κηλουμένους ὑφ' αὑτῶν δι' ἀργίαν τῆς διανοίας, δικαίως ἂν καταγελῷεν, ἡγούμενοι ἀνδράποδα ἄττα σφίσιν ἐλθόντα εἰς τὸ καταγώγιον ὥσπερ προβάτια μεσημβριάζοντα περὶ τὴν κρήνην εὕδειν· ἐὰν δὲ ὀρῶσι διαλεγομένους καὶ παραπλέοντάς σφας ὥσπερ Σειρῆνας ἀκηλήτους, ὃ γέρας παρὰ θεῶν ἔχουσιν ἀνθρώποις διδόναι, τάχ' ἂν δοῖεν ἀγασθέντες.

(*d*) εἰς ὃ ἀφικέσθαι προελθόντας ἡμερησίαν ὁδόν, καὶ ἰδεῖν αὐτόθι κατὰ μέσον τὸ φῶς ἐκ τοῦ οὐρανοῦ τὰ ἄκρα αὐτοῦ τῶν δεσμῶν τεταμένα· εἶναι γὰρ τοῦτο τὸ φῶς ξύνδεσμον τοῦ οὐρανοῦ, οἷον τὰ ὑποζώματα τῶν τριήρων, οὕτω πᾶσαν ξυνέχον τὴν περιφοράν· ἐκ δὲ τῶν ἄκρων τεταμένον Ἀνάγκης ἄτρακτον, δι' οὗ πάσας ἐπιστρέφεσθαι τὰς περιφοράς· οὗ τὴν μὲν ἠλακάτην τε καὶ τὸ ἄγκιστρον εἶναι ἐξ ἀδάμαντος, τὸν δὲ σφόνδυλον μικτὸν ἔκ τε τούτου καὶ ἄλλων γενῶν.

C. ARISTOTLE, ETHICS.

1. Translate with notes :—

(*a*) οἱ δὴ κομίσαντες τὴν δόξαν ταύτην οὐκ ἐποίουν ἰδέας ἐν οἷς τὸ πρότερον καὶ ὕστερον ἔλεγον, διόπερ οὐδὲ τῶν ἀριθμῶν ἰδέαν κατεσκεύαζον· τὸ δ' ἀγαθὸν λέγεται καὶ ἐν τῷ τί ἐστι καὶ ἐν τῷ ποιῷ καὶ ἐν τῷ πρός τι, τὸ δὲ καθ' αὑτὸ καὶ ἡ οὐσία πρότερον τῇ φύσει τοῦ πρός τι (παραφυάδι γὰρ τοιοῦτ' ἔοικε καὶ συμβεβηκότι τοῦ ὄντος)· ὥστ' οὐκ ἂν εἴη κοινή τις ἐπὶ τούτοις ἰδέα.

(*b*) διαφέρει δὲ τῶν παθῶν ἕκαστον περὶ ζῶντας ἢ τελευτήσαντας συμβαίνειν πολὺ μᾶλλον ἢ τὰ παράνομα καὶ δεινὰ προϋπάρχειν ἐν ταῖς τραγῳδίαις ἢ πράττεσθαι

(*c*) ἐκεῖνο δὲ προδιομολογείσθω, ὅτι πᾶς ὁ περὶ τῶν πρακτῶν λόγος τύπῳ καὶ οὐκ ἀκριβῶς ὀφείλει λέγεσθαι, ὥσπερ καὶ κατ' ἀρχὰς εἴπομεν ὅτι κατὰ τὴν ὕλην οἱ λόγοι ἀπαιτητέοι.

(*d*) ἐκ τούτων δὲ δῆλον καὶ ὅτι οὐ καλῶς λέγουσι κίνησιν ἢ γένεσιν εἶναι τὴν ἡδονήν. οὐ γὰρ πάντων ταῦτα λέγεται, ἀλλὰ τῶν μεριστῶν καὶ μὴ ὅλων· οὐδὲ γὰρ ὁράσεώς ἐστι γένεσις οὐδὲ στιγμῆς οὐδὲ μονάδος, οὐδὲ τούτων οὐθὲν κίνησις οὐδὲ γένεσις· οὐδὲ δὴ ἡδονῆς· ὅλον γάρ τι.

(*e*) *ἐν δὲ ταῖς πλείσταις τῶν πόλεων ἐξημέληται περὶ τῶν τοιούτων, καὶ ζῇ ἕκαστος ὡς βούλεται, κυκλωπικῶς θεμιστεύων παίδων ἠδ' ἀλόχου.*

2. How does Aristotle arrive at a definition of true human happiness?

D. ARISTOTLE, POETICS.

1. Translate with notes :—

(*a*) *ἔτι δὲ τὸ μέγεθος ἐκ μικρῶν μύθων καὶ λέξεως γελοίας διὰ τὸ ἐκ σατυρικοῦ μεταβαλεῖν ὀψὲ ἀπεσεμνύνθη· τό τε μέτρον ἐκ τετραμέτρου ἰαμβεῖον ἐγένετο· τὸ μὲν γὰρ πρῶτον τετραμετρῳ ἐχρῶντο διὰ τὸ σατυρικὴν καὶ ὀρχηστικωτέραν εἶναι τὴν ποίησιν, λέξεως δὲ γενομένης αὐτὴ ἡ φύσις τὸ οἰκεῖον μέτρον εὗρε, μάλιστα γὰρ λεκτικὸν τῶν μέτρων τὸ ἰαμβεῖόν ἐστιν.*

(*b*) *δύο μὲν οὖν τοῦ μύθου μέρη περὶ ταῦτ' ἐστί, περιπέτεια καὶ ἀναγνώρισις, τρίτον δὲ πάθος. τούτων δὲ περιπέτεια μὲν καὶ ἀναγνώρισις εἴρηται, πάθος δέ ἐστι πρᾶξις φθαρτικὴ ἢ ὀδυνηρά, οἷον οἵ τε ἐν τῷ φανερῷ θάνατοι καὶ αἱ περιωδυνίαι καὶ τρώσεις καὶ ὅσα τοιαῦτα.*

(*c*) *λέξεως δὲ ἀρετὴ σαφῆ καὶ μὴ ταπεινὴν εἶναι. σαφεστάτη μὲν οὖν ἐστιν ἡ ἐκ τῶν κυρίων ὀνομάτων, ἀλλὰ ταπεινή. παράδειγμα δὲ ἡ Κλεοφῶντος ποίησις καὶ ἡ Σθενέλου. σεμνὴ δὲ καὶ ἐξαλλάττουσα τὸ ἰδιωτικὸν ἡ τοῖς ξενικοῖς κεχρημένη. ξενικὸν δὲ λέγω γλῶτταν καὶ μεταφορὰν καὶ ἐπέκτασιν καὶ πᾶν τὸ παρὰ τὸ κύριον.*

2. State and discuss Aristotle's views in regard to Recognition on the Stage.

B. A. HONOURS.

DEMOSTHENES, DE CORONA AND JEBB'S ATTIC ORATORS.

TUESDAY, APRIL 20TH :—MORNING, 9 TO 12.

A. DEMOSTHENES.

1. Translate with notes :—

(*a*) *οὐ γὰρ ἀφαιρεῖσθαι δεῖ τὸ προσελθεῖν τῷ δήμῳ καὶ λόγου τυχεῖν, οὐδ' ἐν ἐπηρείας τάξει καὶ φθόνου τοῦτο ποιεῖν· οὔτε μὰ τοὺς θεοὺς ὀρθῶς ἔχον οὔτε πολιτικὸν οὔτε δίκαιόν ἐστιν, ὦ ἄνδρες Ἀθηναῖοι, ἀλλ' ἐφ' οἷς ἀδικοῦντά μέ ἐώρα τὴν πόλιν, οὐσί γε τηλικούτοις ἡλίκα νῶν ἐπαγῳδεῖ καὶ διεξῄει, ταῖς ἐκ τῶν νόμων τιμωρίαις παρ' αὐτὰ τἀδικήματα χρῆσθαι, εἰ μὲν εἰσαγγελίας ἄξια πράττονθ' ἑώρα, εἰσαγγελλοντα καὶ τοῦτον τὸν τρόπον εἰς κρίσιν καθιστάντα παρ' ὑμῖν, εἰ δὲ γράφοντα παράνομα, παρανόμων γραφόμενον· οὐ γὰρ δήπου Κτησιφῶντα μὲν δύναται διώκειν δι' ἐμέ, ἐμὲ δ', εἴπερ ἐξελέγξειν ἐνόμιζεν, αὐτὸν οὐκ ἂν ἐγράψατο.*

Distinguish the different forms of prosecution in Athens.

(*b*) *ὡς δὲ τὸ τῆς πόλεως ἀξίωμα λαβὼν ἀφίκετ' εἰς τοὺς ἀμφικτύονας, πάντα τἄλλ' ἀφεὶς καὶ παριδὼν ἐπέραινεν ἐφ' οἷς ἐμισθώθη, καὶ λόγους εὐπροσώπους καὶ μύθους, ὅθεν ἡ Κιρραία χώρα καθιερώθη, συνθεὶς καὶ διεξελθὼν ἀνθρώπους ἀπείρους λόγων καὶ τὸ μέλλον οὐ προορωμένους, τοὺς ἱερομνήμονας, πείθει ψηφίσασθαι περιελθεῖν τὴν χώραν, ἣν οἱ μὲν Ἀμφισσεῖς σφῶν αὐτῶν οὖσαν γεωργεῖν ἔφασαν, οὗτος δὲ τῆς ἱερᾶς χώρας ᾐτιᾶτ' εἶναι, οὐδεμίαν δίκην τῶν Λοκρῶν ἐπαγόντων ἡμῖν, οὐδ' ἃ νῦν προφασίζεται, λέγων οὐκ ἀληθῆ. γνώσεσθε δ' ἐκεῖθεν. οὐκ*

ἐνῆν ἄνευ τοῦ προσκαλέσασθαι δήπου τοὺς Λοκροὺς δίκην κατὰ τῆς πόλεως τελέσασθαι. τίς οὖν ἐκλήτευσεν ἡμᾶς; ἀπὸ ποίας ἀρχῆς; εἰπὲ τὸν εἰδότα, δεῖξον.

(c) καίτοι ὅτῳ τὰ τῶν Ἑλλήνων ἀτυχήματ' ἐνευδοκιμεῖν ἀπέκειτο ἀπολωλέναι μᾶλλον οὗτός ἐστι δίκαιος ἢ κατηγορεῖν ἑτέρου· καὶ ὅτῳ συνενηνόχασιν οἱ αὐτοὶ καιροὶ καὶ τοῖς τῆς πόλεως ἐχθροῖς, οὐκ ἔνι τοῦτον εὔνουν εἶναι τῇ πατρίδι. διηλοῖς δὲ καὶ ἐξ ὧν ζῇς καὶ ποιεῖς καὶ πολιτεύει καὶ πάλιν οὐ πολιτεύει. πράττεταί τι τῶν ὑμῖν δοκούντων συμφέρειν· ἄφωνος Αἰσχίνης. ἀντέκρουσέ τι καὶ γέγονεν οἷον οὐκ ἔδει· πάρεστιν Αἰσχίνης, ὥσπερ τὰ ῥήγματα καὶ τὰ σπάσματα, ὅταν τι κακὸν τὸ σῶμα λάβῃ, τότε κινεῖται.

(d) ἀνὴρ δὲ γενόμενος τῇ μητρὶ τελούσῃ τὰς βίβλους ἀνεγίγνωσκές καὶ τἄλλα συνεσκευωροῦ, τὴν μὲν νύκτα νεβρίζων καὶ κρατηρίζων καὶ καθαίρων τοὺς τελουμένους καὶ ἀπομάττων τῷ πηλῷ καὶ τοῖς πιτύροις, καὶ ἀνιστὰς ἀπὸ τοῦ καθαρμοῦ κελεύων λέγειν „ἔφυγον κακόν, εὗρον ἄμεινον", ἐπὶ τῷ μηδένα πώποτε τηλικοῦτον ὀλολύξαι σεμνυνόμενος (καὶ ἔγωγε νομίζω· μὴ γὰρ οἴεσθ' αὐτὸν φθέγγεσθαι μὲν οὕτω μέγα, ὀλολύζειν δ' οὐχ ὑπέρλαμπρον), ἐν δὲ ταῖς ἡμέραις τοὺς καλοὺς θιάσους ἄγων διὰ τῶν ὁδῶν, τοὺς ἐστεφανωμένους τῷ μαράθῳ καὶ τῇ λεύκῃ, τοὺς ὄφεις τοὺς παρείας θλίβων καὶ ὑπὲρ τῆς κεφαλῆς αἰωρῶν, καὶ βοῶν „εὐοῖ σαβοῖ," καὶ ἐπορχούμενος „ὗης ἄττης, ἄττης ὗης," ἔξαρχος καὶ προηγεμὼν καὶ κιττοφόρος καὶ λικνοφόρος καὶ τοιαῦθ' ὑπὸ τῶν γραδίων προσαγορευόμενος, μισθὸν λαμβάνων τούτων ἔνθρυπτα καὶ στρεπτοὺς καὶ νεήλατα, ἐφ' οἷς τίς οὐκ ἂν ὡς ἀληθῶς αὐτὸν εὐδαιμονίσειε καὶ τὴν αὐτοῦ τύχην;

2. Comment on :—

(a) ὤμοσε τὴν εἰρήνην προλαβὼν τὴν Θρᾴκην διὰ τούτους οὐχὶ πεισθέντας τῷ ἐμῷ ψηφίσματι.

(*b*) πάλιν σφετεριζομένων Θηβαίων τὴν Εὔβοιαν οὐ περιείδετε.

(*c*) δυοῖν ἐφάνη τριήραρχος ὁ τῆς μιᾶς ἔκτος καὶ δέκατος πρότερον συντελής.

(*d*) ὅτε μ' εἰσῆγον οἱ λογισταί.

(*e*) ὥσπερ ἐξ ἀμάξης

(*f*) λέγε δὴ καὶ τοὺς χρόνους ἐν οἷς ταῦτ' ἐγίγνετο· εἰσὶ γὰρ καθ' οὓς ἐπυλαγόρησεν οὗτος.

(*g*) χρημάτων σύνταξιν εἰς πέντε καὶ τεσσαράκοντα τάλαντα.

(*h*) τί δίκαιον ἦν τοῖς ὑπ' ἐμοῦ πεπραγμένοις θέσθαι τὸν Κτησιφῶντ' ὄνομα;

(*i*) πλείω λαμβάνων ἀπὸ τούτων τραύματα ἢ τῶν ἀγώνων.

3. (*a*) Give a very brief account of the occasion of this speech. (*b*) What do you know of Amphipolis, Eubulus, Philocrates, Tromes? (*c*) On what grounds are the inserted documents regarded as spurious? Give instances.

B. ATTIC ORATORS.

1. Translate with notes :—

(*a*) ὁ δὲ παῖς εἴπερ ἐστὸς φανερὸς ὑμῖν ἐστὶ μὴ βληθείς, ἑκουσίως ὑπὸ τὴν φορὰν τοῦ ἀκοντίου ὑπελθὼν ἔτι σαφέστερος δηλοῖ τι διὰ τὴν αὐτοῦ ἁμαρτίαν ἀποθανών· οὐ γὰρ ἂν ἐβλήθη ἀτρεμίζων καὶ μὴ διατρέχων.

(*b*) ἦκον δὲ εἰς ἄστυ ζητητάς τε ἤδη ἠρημένους καταλαμβάνειν καὶ μήνυτρα κεκηρυγμένα ἑκατὸν μνᾶς. ἰδὼν δὲ Εὔφημον τὸν Καλλίου τοῦ Τηλεκλέους ἀδελφὸν ἐν τῷ χαλκείῳ καθήμενον, ἀναγαγὼν αὐτὸν εἰς τὸ Ἡφαιστεῖον λέγειν ἅπερ ὑμῖν ἐγὼ εἴρηκα, ὡς ἴδοι ἡμᾶς ἐν ἐκείνῃ τῇ νυκτί· οὕνουν δέοιτο παρὰ τῆς πόλεως χρήματα λαβεῖν μᾶλλον ἢ παρ' ἡμῶν, ὥσθ' ἡμᾶς ἔχειν φίλους.

(*c*) ἔπειτα δὲ ἐκ μὲν τοῦ σανιδίου τοὺς ἱππεύσαντας σκοπεῖν εὔηθές ἐστιν· ἐν τούτῳ γὰρ πολλοὶ μὲν τῶν ὁμολογούντων ἱππεύειν οὐκ ἔνεισιν, ἔνιοι δὲ τῶν ἀποδημούντων ἐπιγεγραμμένοι εἰσίν. ἐκεῖνος δ' ἐστὶν ἔλεγχος μέγιστος· ἐπειδὴ γὰρ κατήλθετε, ἐψηφίσασθε τοὺς φυλάρχους ἀπενεγκεῖν τοὺς ἱππεύσαντας, ἵνα τὰς καταστάσεις ἀναπράττητε παρ' αὐτῶν. ἐμὲ τοίνυν οὐδεὶς ἂν ἀποδείξειεν οὔτ' ἀπενεχθέντα ὑπὸ τῶν φυλάρχων οὔτε παραδοθέντα τοῖς συνδίκοις οὔτε κατάστασιν παραλαβόντα.

(*d*) ὃ δὲ πάντων καταγελαστότατον, ὅτι παρὰ μὲν ὧν δεῖ λαβεῖν αὐτούς, τούτοις μὲν ἀπιστοῦσιν, οἷς μέλλουσι τὴν δικαιοσύνην παραδώσειν, ὧν δ' οὐδεπώποτε διδάσκαλοι γεγόνασι, παρὰ τούτοις τὰ παρὰ τῶν μαθητῶν μεσεγγυῶνται, πρὸς μὲν τὴν ἀσφάλειαν εὖ βουλευόμενοι, τῷ δ' ἐπαγγέλματι τἀναντία πράττοντες.

(*e*) τὸν μὲν τούτου οἶκον σύ, ὦ Δικαιόγενες, παραλαβὼν κακῶς καὶ αἰσχρῶς διολώλεκας, καὶ ἐξαργυρισάμενος πενίαν ὀδύρῃ, ποῖ ἀναλώσας; οὔτε γὰρ εἰς τὴν πόλιν οὔτε εἰς τοὺς φίλους φανερὸς εἶ δαπανηθεὶς οὐδέν. ἀλλὰ μὴν οὐδὲ καθιπποτρόφηκας· οὐ γὰρ πώποτε ἐκτήσω ἵππον πλείονος ἄξιον ἢ τριῶν μνῶν· οὔτε κατεζευγοτρόφηκας, ἐπεὶ οὐδὲ ζεῦγος ἐκτήσω ὁρικὸν οὐδεπώποτε ἐπὶ τοσούτοις ἀγροῖς καὶ κτήμασιν. ἀλλ' οὐδ' ἐκ τῶν πολεμίων ἐλύσω οὐδένα. ἀλλ' οὐδὲ τὰ ἀναθήματα, ἃ Μενέξενος τριῶν ταλάντων ποιησάμενος ἀπέθανε πρὶν ἀναθεῖναι, εἰς τὴν πόλιν κεκόμικας, ἀλλ' ἐν τοῖς λιθουργείοις ἔτι κυλινδεῖται.

2. Comment on :—

(*a*) ἅπαντα τῶν γεραιοτέρων τὰ νόμιμα.

(*b*) ἀναστὰς δὲ Πείσανδρος ἔφη χρῆναι λύειν τὸ ἐπὶ Σκαμανδρίου ψήφισμα.

(*c*) Ἀθήνησι ποιήσασθαι τῶν κοινῶν χρημάτων Ἑλληνοταμίας.

(*d*) ἀλλ' οὐκ, εἴ τις κομᾷ, διὰ τοῦτο μισεῖν.

(*e*) ὁ μὲν γὰρ ὥσπερ ἐπικλήρου τῆς συμφορᾶς οὔσης ἀμφισβητήσων ἦκει.

(*f*) ἄγειν μὲν τὸν Ἀγόρατον οὐκ ἔφασαν προήσεσθαι ἀφῃροῦντο δὲ καὶ ἠγγυῶντο καὶ ὡμολόγουν παρέξειν εἰς τὴν βουλήν.

(*g*) ἀκριβέστατα ἂν ἔφασάν με πυθέσθαι ἐλθόντα εἰς τὸν χλωρὸν τυρὸν τῇ ἔνῃ καὶ νέᾳ.

(*h*) νῦν δὲ τοσοῦτου μεταπεπτώκασιν ὥσθ' ἁμιλλᾶσθαι οἵτινες αὐτῶν δόξουσι φιλέλληνες εἶναι μάλιστα.

(*i*) ποιητικοῦ πράγματος τεταγμένην τέχνην παραδείγμα φέροντες λελήθασι σφᾶς αὐτούς.

(*k*) τὴν ἡμίσειαν ἐκ τῶν συνθηκῶν εἴληφεν, ὥσπερ πρὸς τὸν Δία τὴν χώραν νεμόμενος.

(*l*) διὰ τὰς δεκαρχίας τὰς ἐπὶ Λακεδαιμονίων.

(*m*) πρὸ τῶν δικαστηρίων κληρουμένους, τῶν δ' Ἑλλήνων τοὺς ἐλαύνειν τὰς ναῦς βουλομένους τρέφειν ἀξιοῦντας.

(*n*) φάσκων ἐφ' ὅλῃ ποιηθῆναι υἱὸς ὑπὸ τοῦ θείου τοῦ ἡμετέρου.

(*o*) ἔλεγχον ἐκ βασάνων ποιήσασθαι περὶ αὐτῶν.

B. A. HONOURS.

SOPHOCLES, ANTIGONE AND PHILOCTETES; ARISTOPHANES, FROGS.

MONDAY, APRIL 19TH :—MORNING, 9 TO 12.

A. SOPHOCLES, ANTIGONE.

1. Translate with notes :—

(*a*) *οὐδὲν γὰρ οὔτ' ἀλγεινὸν οὔτ' ἄτης ἄτερ*
οὔτ' αἰσχρὸν οὔτ' ἄτιμόν ἐσθ', ὁποῖον οὐ
τῶν σῶν τε κἀμῶν οὐκ ὄπωπ' ἐγὼ κακῶν.

(*b*) *ἀντιτύπᾳ δ' ἐπὶ γᾷ πέσε ταντα̃λωθεὶς*
πυρφόρος, ὃς τότε μαινομένᾳ ζὺν ὁρμᾷ
βακχεύων ἐπέπνει
ῥιπαῖς ἐχθίστων ἀνέμων.
εἶχε δ' ἄλλᾳ τὰ μὲν,
ἄλλα δ' ἐπ' ἄλλοις ἐπενώμα στυφελίζων μέγας
Ἄρης
δεξιόσειρος.

(*c*) *λόγοι δ' ἐν ἀλλήλοισιν ἐρρόθουν κακοί,*
φύλαξ ἐλέγχων φύλακα· κἂν ἐγίγνετο
πληγὴ τελευτῶσ', οὐδ' ὁ κωλύσων παρῆν.
εἷς γάρ τις ἦν ἕκαστος οὐξειργασμένος,
κοὐδεὶς ἐναργής, ἀλλ' ἔφευγε μὴ εἰδέναι.
ἦμεν δ' ἕτοιμοι καὶ μύδρους αἴρειν χεροῖν,
καὶ πῦρ διέρπειν.

(*d*) *ἐγὼ δ' ὅπως σὺ μὴ λέγεις ὀρθῶς τάδε,*
οὔτ' ἂν δυναίμην μήτ' ἐπισταίμην λέγειν
γένοιτο μεντἂν χἀτέρῳ καλῶς ἔχον.

(*e*) *νικᾷ δ' ἐναργὴς βλεφάρων ἵμερος εὐλέκτρου*
νύμφας, τῶν μεγάλων πάρεδρος ἐν ἀρχαῖς
θεσμῶν· ἄμαχος γὰρ ἐμπαίζει θεὸς Ἀφροδίτα.

(*f*) εὐθὺς δὲ δείσας ἐμπύρων ἐγευόμην
βωμοῖσι παμφλέκτοισιν· ἐκ δὲ θυμάτων
Ἥφαιστος οὐκ ἔλαμπεν, ἀλλ᾽ ἐπὶ σποδῷ
μυδῶσα κηκὶς μηρίων ἐτήκετο
κἄτυφε κἀνέπτυε, καὶ μετάρσιοι
χολαὶ διεσπείροντο, καὶ καταρρυεῖς
μηροὶ καλυπτῆς ἐξέκειντο πιμελῆς.

(*g*) ἀνεπταν φόβῳ. τί μ᾽ οὐκ ἀνταίαν
ἔπαισέν τις ἀμφιθήκτῳ ξίφει ;

2. What is the moral problem presented in this play? How far does Sophocles give a satisfactory solution?

B. SOPHOCLES, PHILOCTETES.

1. Translate with notes:—

(*a*) ἔξοιδα, παῖ, φύσει σὲ μὴ πεφυκότα
τοιαῦτα φωνεῖν μηδὲ τεχνᾶσθαι κακά·
ἀλλ᾽ ἡδὺ γάρ τι κτῆμα τῆς νίκης λαβεῖν,
τόλμα· δίκαιοι δ᾽ αὖθις ἐκφανούμεθα.
νῦν δ᾽ εἰς ἀναιδὲς ἡμέρας μέρος βραχὺ
δός μοι σεαυτόν, κἄτα τὸν λοιπὸν χρόνον
κέκλησο πάντων εὐσεβέστατος βροτῶν.
Mss. καί.

(*b*) ΦΙ. οὐ τοῦτον εἶπον, ἀλλὰ Θερσίτης τις ἦν,
ὃς οὐκ ἂν εἵλετ᾽ εἰσάπαξ εἰπεῖν, ὅπου
μηδεὶς ἐᾷ· τοῦτον οἶσθ᾽ εἰ ζῶν κυρεῖ ;

(*c*) ἴωμεν, ὦ παῖ, προσκύσαντε τὴν ἔσω
ἄοικον εἰσοίκησιν, ὥς με καὶ μάθῃς
ἀφ᾽ ὧν διέζων ὥς τ᾽ ἔφυν εὐκάρδιος.

(*d*) ἵν᾽ αὐτὸς ἦν πρόσουρος, οὐκ ἔχων βάσιν,
οὐδέ τιν᾽ ἐγχώρων κακογείτονα,

παρ' ᾧ στόνου ἀντίτυπον βαρυβρῶτ' ἀποκλαύσειεν
αἱματηρόν·
ὃς τὰν θερμοτάταν αἱμάδα κηκιομέναν ἑλκέων
ἐνθήρου ποδὸς ἠπίοισι
φύλλοις κατευνάσειεν.

(*e*) ὦ σχῆμα πέτρας δίπυλον, αὖθις αὖ πάλιν
εἴσειμι πρός σε ψιλός, οὐκ ἔχων τροφήν·
ἀλλ' αὐανοῦμαι τῷδ' ἐν αὐλίῳ μόνος,
οὐ πτηνὸν ὄρνιν οὐδὲ θῆρ' ὀρειβάτην
τόξοις ἐναίρων τοισίδ', ἀλλ' αὐτὸς τάλας
θανὼν παρέξω δαῖθ' ὑφ' ὧν ἐφερβόμην,
καί μ' οὓς ἐθήρων πρόσθε θηράσουσι νῦν.

(*f*) ΦΙ. ὦ πταναὶ θῆραι χαροπῶν τ'
ἔθνη θηρῶν, οὓς ὅδ' ἔχει
χῶρος οὐρεσιβώτας,
μηκέτ' ἀπ' αὐλίων φυγᾷ
πηδᾶτ'. οὐ γὰρ ἔχω χεροῖν
τὰν πρόσθεν βελέων ἀλκάν.

(*g*) χαῖρ', ὦ μελαθρον ξύμφρουρον ἐμοί,
Νύμφαι τ' ἔνυδροι λειμωνιάδες,
καὶ κτύπος ἅρσην πόντου προβολῆς.

2. The character of Odysseus in Homer and in the Dramatists.

C. ARISTOPHANES, THE FROGS.

1. Translate with notes :—

(*a*) ΔΙ. οὔ πρίν γ' ἂν Ἰοφῶντ', ἀπολαβὼν αὐτὸν μόνον,
ἄνευ Σοφοκλέους ὅ τι ποιεῖ κωδωνίσω.

(*b*) ΒΑ. μᾶλλον μὲν οὖν
φθεγξόμεσθ', εἰ δή ποτ' εὐ-

ἡλίοις ἐν ἁμέραισιν
ἡλάμεσθα διὰ κυπείρου
καὶ φλέω, χαίροντες ᾠδῆς
πολυκολύμβοισιν μελεσσιν,
ἢ Διὸς φεύγοντες ὄμβρον
ἔνυδρον ἐν βυθῷ χορείαν
αἰόλαν ἐφθεγξάμεσθα
πομφολυγοπαφλάσμασιν.

(*c*) Ἴακχε φιλοχορευτὰ, συμπρόπεμπέ με,
σὺ γὰρ κατεσχίσω μὲν ἐπὶ γέλωτι
κἀπ' εὐτελείᾳ τόν τε σανδαλίσκον
καὶ τὸ ῥάκος, κἀξεῦρες ὥστ'
ἀζημίους παίζειν τε καὶ χορεύειν.

(*d*) ΠΛΑ. νὼ δὲ δεισάσα γέ που
ἐπὶ τὴν κατήλιφ' εὐθὺς ἀνεπηδήσαμεν·
ὁ δ' ᾤχετ' ἐξάξας γε τοὺς ψιάθους λαβών.

(*e*) ΑΙΑ. ὅτε δὴ κατῆλθ' Εὐριπίδης, ἐπεδείκνυτο
τοῖς λωποδύταις καὶ τοῖσι βαλλαντιοτόμοις
καὶ τοῖσι πατραλοίαισι καὶ τοιχωρύχοις,
ὅπερ ἔστ' ἐν Ἅιδου πλῆθος, οἱ δ' ἀκροώμενοι
τῶν ἀντιλογιῶν καὶ λυγισμῶν καὶ στροφῶν
ὑπερεμάνησαν, κἀνόμισαν σοφώτατον.

(*f*) ἔσται δ' ἱππολόφων τε λόγων κορυθαίολα νείκη,
σκινδαλάμων τε παραξόνια, σμιλεύματά τ' ἔργων,
φωτὸς ἀμυνομένου φρενοτέκτονος ἀνδρὸς
ῥήμαθ' ἱπποβάμονα.

(*g*) ἐγὼ δ' ἁ τάλαινα προσέχουσ' ἔτυχον
ἐμαυτῆς ἔργοισι,
λίνου μέστὸν ἀτρακτον
εἰειειειειειλίσσουσα χεροῖν,

κλωστῆρα ποιοῦσ', ὅπως
κνεφαῖος εἰς ἀγορὰν
φέρουσ' ἀποδοίμαν·
ὁ δ' ἀνέπτατ' ἀνέπτατ' ἐς αἰθέρα
κουφοτάταις πτερύγων ἀκμαῖς.

(*h*) ΑΙΣ. *σὺ χρὴ λέοντος σκύμνον ἐν πόλει τρέφειν.*

2. Summarize the knowledge to be derived from this play in regard to the development of Attic Tragedy.

B. A. HONOURS.

HOMER, ILIAD I, VI: PINDAR (Selections); LYRIC POETS, (Selections).

Saturday, April 17th, 1897:—Morning, 9 to 12.

A. Homer.

1. Translate with notes:—

(*a*) *ἀλλὰ τὰ μὲν πολίων ἐξεπράθομεν, τὰ δέδασται,*
λαοὺς δ' οὐκ ἐπέοικε παλίλλογα ταῦτ' ἐπαγείρειν.

(*b*) *ἦ ποτ' Ἀχιλλῆος ποθὴ ἵξεται υἷας Ἀχαιῶν*
σύμπαντας. τότε δ' οὔ τι δυνήσεαι ἀχνύμενός περ
χραισμεῖν, εὖτ' ἂν πολλοὶ ὑφ' Ἕκτορος ἀνδροφόνοιο
θνήσκοντες πίπτωσι· σὺ δ ἔνδοθι θυμὸν ἀμύξεις
χωόμενος, ὅ τ' ἄριστον Ἀχαιῶν οὐδὲν ἔτισας.

(*c*) *αὐτὰρ ἐπεί ῥ' εὔξαντο καὶ οὐλοχύτας προβάλοντο,*
αὐέρυσαν μὲν πρῶτα καὶ ἔσφαξαν καὶ ἔδειραν,
μηρούς τ' ἐξέταμον κατά τε κνίσῃ ἐκάλυψαν
δίπτυχα ποιήσαντες, ἐπ' αὐτῶν δ' ὠμοθέτησαν.
καῖε δ' ἐπὶ σχίζῃς ὁ γέρων, ἐπὶ δ' αἴθοπα οἶνον
λείβε· νέοι δὲ παρ' αὐτὸν ἔχον πεμπώβολα χερσίν.

αὐτὰρ ἐπεὶ κατὰ μῆρα κάη καὶ σπλάγχνα πάσαντο,
μίστυλλόν τ' ἄρα τἆλλα καὶ ἀμφ' ὀβελοῖσιν ἔπειραν,
ὤπτησάν τε περιφραδέως, ἐρύσαντό τε πάντα.

(*d*) ἠύτε ἔθνεα εἶσι μελισσάων ἀδινάων,
πέτρης ἐκ γλαφυρῆς αἰεὶ νέον ἐρχομενάων·
βοτρυδὸν δὲ πέτονται ἐπ' ἄνθεσιν εἰαρινοῖσιν·
αἱ μέν τ' ἔνθα ἅλις πεποτήαται, αἱ δέ τε ἔνθα·
ὣς τῶν ἔθνεα πολλὰ νεῶν ἄπο καὶ κλισιάων
ἠιόνος προπάροιθε βαθείης ἐστιχόωντο
ἰλαδὸν εἰς ἀγορήν· μετὰ δέ σφισιν ὄσσα δεδήειν,
ὀτρύνουσ' ἰέναι, Διὸς ἄγγελος· οἱ δ' ἀγέροντο.

(*e*) φολκὸς ἔην, χωλὸς δ' ἕτερον πόδα· τὼ δέ οἱ ὤμω
κυρτώ, ἐπὶ στῆθος συνοχωκότε· αὐτὰρ ὕπερθεν
φοξὸς ἔην κεφαλήν, ψεδνὴ δ' ἐπενήνοθε λάχνη.

(*f*) εἰ δέ κ' Ἀλέξανδρον κτείνῃ ξανθὸς Μενελαος,
Τρῶας ἔπειθ' Ἑλένην καὶ κτήματα πάντ' ἀποδοῦναι.

(*g*) αὐτὰρ ὁ σύλα πῶμα φαρέτρης, ἐκ δ' ἕλετ' ἰὸν
ἀβλῆτα πτερόεντα, μελαινέων ἕρμ' ὀδυνάων·
αἶψα δ' ἐπὶ νευρῇ κατεκόσμεε πικρὸν ὀιστόν,
εὔχετο δ' Ἀπόλλωνι λυκηγενέι κλυτοτόξῳ.

(*h*) οὐκ ἐν καιρίῳ ὀξὺ πάγη βέλος, ἀλλὰ πάροιθεν
εἰρύσατο ζωστήρ τε παναίολος ἠδ' ὑπένερθεν
ζῶμά τε καὶ μίτρη, τὴν χαλκῆες κάμον ἄνδρες.

(*i*) πέμπε δέ μιν Λυκίηνδε, πόρεν δ' ὅ γε σήματα λυγρά,
γράψας ἐν πίνακι πτυκτῷ θυμοφθόρα πολλά,
δεῖξαι δ' ἠνώγει ᾧ πενθερῷ, ὄφρ' ἀπόλοιτο.

2. Comment on :—

κουριδίης ἀλόχου, ἑλικώπιδα κούρην, θείομεν, ἀμφιγυήεις, διάκτορος ἀργεϊφόντης, μητίετα Ζεύς, τρυφάλεια, ἑκκαιδεκάδωρα, ταλαύρινον πολεμιστήν, καταβήσετο, Σμινθεῦς.

3. Discuss the differences between Homeric and Attic usage in regard to:—

(*a*) The use of ἂν = κὲν.

(*b*) Elision and Hiatus.

B. Pindar.

1. Translate with notes:—

(*a*) ὅσοι δ' ἐτόλμασαν ἐστρίς
ἑκατέρωθι μείναντες ἀπὸ πάμπαν ἀδίκων ἔχειν
ψυχάν, ἔτειλαν Διὸς ὁδὸν παρὰ Κρόνου τύρσιν· ἔνθα
μακάρων
νᾶσον ὠκεανίδες
αὖραι περιπνέοισιν· ἄνθεμα δὲ χρυσοῦ φλέγει,
τὰ μὲν χερσόθεν ἀπ' ἀγλαῶν δενδρέων, ὕδωρ δ' ἄλλα
φέρβει,
ὅρμοισι τῶν χέρας ἀναπλέκοντι καὶ στεφάνοις,
βουλαῖς ἐν ὀρθαῖσι Ῥαδαμάνθυος,
ὃν πατὴρ ἔχει Διὸς ἑτοῖμον αὐτῷ πάρεδρον,
πόσις ἁπάντων Ῥέας ὑπέρτατον ἐχοίσας θρόνον.

(*b*) θεὸς ἅπαν ἐπὶ ἐλπίδεσσι τέκμαρ ἀνύεται,
θεός, ὃ καὶ πτερόεντ' αἰετὸν κίχε, καὶ θαλασσαῖον
παραμείβεται
δελφῖνα, καὶ ὑψιφρόνων τιν' ἔκαμψε βροτῶν,
ἑτέροισι δὲ κῦδος ἀγήραον παρέδωκ'. ἐμὲ δὲ χρεών
φεύγειν δάκος ἀδινὸν κακαγοιᾶν.
εἶδον γὰρ ἑκὰς ἐὼν ταπόλλ' ἐν ἀμαχανίᾳ
ψογερὸν Ἀρχιλοχον βαρυλόγοις ἔχθεσιν
πιαινόμενον· τὸ πλουτεῖν δὲ σὺν τύχᾳ πότμου σοφίας
ἄριστον.

(*c*) ἔδοξ' ἆρα καὶ ἀθανάτοις,
ἐσλόν γε φῶτα καὶ φθίμενον ὕμνοις θεᾶν διδόμεν

τὸ καὶ νῦν φέρει λόγον, ἔσσυταί τε Μοισαῖον ἅρμα
Νικοκλέος
μνᾶμα πυγμάχου κελαδῆσαι. γεραίρετέ νιν, ὃς Ἴσθμιον ἀν νάπος
Δωρίων ἔλαχεν σελίνων· ἐπεὶ περικτίονας
ἐνίκασε δή ποτε καὶ κεῖνος ἄνδρας ἀφύκτῳ χερὶ κλονέων.

(*d*) τὸ κοινόν τις ἀστῶν ἐν εὐδίᾳ τιθείς
ἐρευνασάτω
μεγαλάνορος Ἀσυχίας τὸ φιλδρὸν φάος,
στάσιν ἀπο πραπίδος ἐπίκοτον ἀνελών,
πενίας δότειραν, ἐχθρὰν κουροτρόφον.

C. Lyric Poets.

1. Translate with notes:—

(*a*) εὐνομία δ' εὔκοσμα καὶ ἄρτια πάντ' ἀποφαίνει,
καὶ θαμὰ τοῖς ἀδίκοις ἀμφιτίθησι πέδας·
τραχέα λειαίνει, παύει κόρον, ὕβριν ἀμαυροῖ,
αὐαίνει δ' ἄτης ἄνθεα φυόμενα,
εὐθύνει δὲ δίκας σκολιὰς ὑπερήφανά τ' ἔργα
πραΰνει, παύει δ' ἔργα διχοστασίης,

(*b*) ὅστις τοι δοκέει τὸν πλησίον ἴδμεναι οὐδέν,
ἀλλ' αὐτὸς μοῦνος ποικίλα δήνε' ἔχειν,
κεῖνός γ' ἄφρων ἐστί, νόου βεβλαμμένος ἐσθλοῦ.
ἴσως γὰρ πάντες ποικίλ' ἐπιστάμεθα,
ἀλλ' ὁ μὲν οὐκ ἐθέλει κακοκερδίῃσιν ἕπεσθαι,
τῷ δὲ δολοπλοκίαι μᾶλλον ἄπιστοι ἄδον.

(*c*) ἀλλὰ τυῖδ' ἔλθ', αἴ ποτα κἀτέρωτα
τᾶς ἔμας αὔδως ἀΐοισα πήλυι
ἔκλυες, πάτρος δὲ δόμον λίποισα,
χρύσιον ἦλθες

ἅρμ' ὑποζεύξαισα· κάλοι δέ σ' ἆγον
ὦκεες στροῦθοι περὶ γᾶς μελαίνας
πύκνα δινεῦντες πτέρ' ἀπ' ὠράνω αἴθε-
ρος διὰ μέσσω.

(*d*) σὺ δ' ἀωτεῖς γαλαθηνῷ τ' ἤτορι κνώσσεις ἐν ἀτερπεῖ
δούρατι χαλκεογόμφῳ
νυκτιλαμπεῖ κυανέῳ τε δνόφῳ σταλείς·
αὐαλέαν δ' ὕπερθεν τεὰν κόμαν βαθεῖαν
παριύντος κύματος οὐκ ἀλέγεις,
οὐδ' ἀνέμου φθόγγων,
κείμενος ἐν πορφυρέᾳ χλανίδι, καλὸν πρόσωπον.

2. What do you know of :—Tyrtaeus, Archilochus, Anacreon.

B. A. HONOURS.

THUCYDIDES I.

THURSDAY, APRIL 22ND.

1. Translate with notes :—

(*a*) τὴν γοῦν Ἀττικὴν ἐκ τοῦ ἐπὶ πλεῖστον διὰ το λεπτόγεων ἀστασίαστον οὖσαν ἄνθρωποι ᾤκουν οἱ αὐτοὶ ἀεί. καὶ παράδειγμα τόδε τοῦ λόγου οὐκ ἐλάχιστόν ἐστι, διὰ τὰς μετοικίας ἐς τὰ ἄλλα μὴ ὁμοίως αὐξηθῆναι. ἐκ γὰρ τῆς ἄλλης Ἑλλάδος οἱ πολέμῳ ἢ στάσει ἐκπίπτοντες παρ' Ἀθηναίους οἱ δυνατώτατοι, ὡς βέβαιον ὂν, ἀνεχώρουν.

(Mss. μετοικίας ἐς τὰ ἄλλα.)

(*b*) καὶ οἱ πρεσβύτεροι αὐτοῖς τῶν εὐδαιμόνων διὰ τὸ ἀβροδίαιτον οὐ πολὺς χρόνος ἐπειδὴ χιτῶνάς τε λινοῦς ἐπαύσαντο φοροῦντες καὶ χρυσῶν τεττίγων ἐνέρσει κρωβύ-

λον ἀναδούμενοι τῶν ἐν τῇ κεφαλῇ τριχῶν. ἀφ' οὗ καὶ Ἰώνων τοὺς πρεσβυτέρους κατὰ τὸ ξυγγενὲς ἐπὶ πολὺ αὕτη ἡ σκευὴ κατέσχε.

(c) περιουσίαν δὲ εἰ ἦλθον ἔχοντες τροφῆς, καὶ ὄντες ἀθρόοι ἄνευ λῃστείας καὶ γεωργίας ξυνεχῶς τὸν πόλεμον διέφερον, ῥᾳδίως ἂν μάχῃ κρατοῦντες εἷλον, οἵ γε καὶ οὐκ ἀθρόοι, ἀλλὰ μέρει τῷ ἀεὶ παρόντι ἀντεῖχον. πολιορκίᾳ δ' ἂν προσκαθεζόμενοι ἐν ἐλάσσονί τε χρόνῳ καὶ ἀπονώτερον τὴν Τροίαν εἷλον.

(d) καὶ ἐγένετο αὐτοῖς ἐς τόνδε τὸν πόλεμον ἡ ἰδία παρασκευὴ μείζων ἢ ὡς τὰ κράτιστά ποτε μετὰ ἀκραιφνοῦς τῆς ξυμμαχίας ἤνθησαν.

(e) ἐκ δὲ τῶν εἰρημένων τεκμηρίων ὅμως τοιαῦτα ἂν τις νομίζων μάλιστα ἃ διῆλθον οὐχ ἁμαρτάνοι, καὶ οὔτε ὡς ποιηταὶ ὑμνήκασι περὶ αὐτῶν, ἐπὶ τὸ μεῖζον κοσμοῦντες μᾶλλον πιστεύων, οὔτε ὡς λογογράφοι ξυνέθεσαν ἐπὶ τὸ προσαγωγότερον τῇ ἀκροάσει ἢ ἀληθέστερον, ὄντα ἀνεξέλεγκτα καὶ τὰ πολλὰ ὑπὸ χρόνου αὐτῶν ἀπίστως ἐπὶ τὸ μυθῶδες ἐκνενικηκότα, εὑρῆσθαι δὲ ἡγησάμενος ἐκ τῶν ἐπιφανεστάτων σημείων, ὡς παλαιὰ εἶναι, ἀποχρώντως.

(f) πολλὰ δὲ, ὥσπερ ἐν ἀρχῇ ὑπείπομεν, τὰ ξυμφέροντα ἀποδείκνυμεν, καὶ μέγιστον, ὅτι οἵ τε αὐτοὶ πολέμιοι ἡμῖν ἦσαν, ὅπερ σαφεστάτη πίστις, καὶ οὗτοι οὐκ ἀσθενεῖς ἀλλ' ἱκανοὶ τοὺς μεταστάντας βλάψαι· καὶ ναυτικῆς καὶ οὐκ ἠπειρώτιδος τῆς ξυμμαχίας διδομένης, οὐχ ὁμοία ἡ ἀλλοτρίωσις, ἀλλὰ μάλιστα μὲν, εἰ δύνασθε, μηδένα ἄλλον ἐᾷν κεκτῆσθαι ναῦς, εἰ δὲ μὴ, ὅστις ἐχυρώτατος, τοῦτον φίλον ἔχειν.

(g) καὶ δῆλον ὅτι εἰ τοῖς πλέοσιν ἀρέσκοντές ἐσμεν, τοῖσδ' ἂν μόνοις οὐκ ὀρθῶς ἀπαρέσκοιμεν, οὐδ' ἐπιστρατεύομεν ἐκπρεπῶς, μὴ καὶ διαφερόντως τι ἀδικούμενοι.

(*h*) οὐ γὰρ ὁ δουλωσάμενος, ἀλλ' ὁ δυνάμενος μὲν παῦσαι περιορῶν δὲ ἀληθέστερον αὐτὸ δρᾷ, εἴπερ καὶ τὴν ἀξίωσιν τῆς ἀρετῆς ὡς ἐλευθερῶν τὴν Ἑλλάδα φέρεται. μόλις δὲ νῦν τε ξυνήλθομεν, καὶ οὐδὲ νῦν ἐπὶ φανεροῖς χρὴν γὰρ οὐκ εἰ ἀδικούμεθα ἔτι σκοπεῖν, ἀλλὰ καθ' ὅτι ἀμυνούμεθα. οἱ γὰρ δρῶντες βεβουλευμένοι πρὸς οὐ διεγνωκότας ἤδη καὶ οὐ μέλλοντες ἐπέρχονται. καὶ ἐπιστάμεθα τίᾳ ὁδῷ οἱ Ἀθηναῖοι καὶ ὅτι κατ' ὀλίγον χωροῦσιν ἐπὶ τοὺς πέλας. καὶ λανθάνειν μὲν οἰόμενοι διὰ τὸ ἀναίσθητον ὑμῶν ἧσσον θαῤῥοῦσι, γνότες δὲ εἰδότας περιορᾷν ἰσχυρῶς ἐγκείσονται.

(*i*) Ταύτης μέντοι τοιαύτης ἀντικαθεστηκυίας πόλεως, ὦ Λακεδαιμόνιοι, διαμέλλετε καὶ οἴεσθε τὴν ἡσυχίαν οὐ τούτοις τῶν ἀνθρώπων ἐπὶ πλεῖστον ἀρκεῖν, οἵ ἂν τῇ μὲν παρασκευῇ δίκαια πράσσωσι, τῇ δὲ γνώμῃ, ἢν ἀδικῶνται, δῆλοι ὦσι μὴ ἐπιτρέψοντες, ἀλλ' ἐπὶ τῷ μὴ λυπεῖν τε ἄλλους καὶ αὐτοὶ ἀμυνόμενοι μὴ βλάπτεσθαι τὸ ἴσον νέμετε.

(*k*) οἱ δὲ εἰθισμένοι πρὸς ἡμᾶς ἀπὸ τοῦ ἴσου ὁμιλεῖν, ἤν τι, παρὰ τὸ μὴ οἴεσθαι χρῆναι, ἢ γνώμῃ ἢ δυνάμει τῇ διὰ τὴν ἀρχὴν καὶ ὁπωσοῦν ἐλασσωθῶσιν, οὐ τοῦ πλέονος μὴ στερισκόμενοι χάριν ἔχουσιν, ἀλλὰ τοῦ ἐνδεοῦς χαλεπώτερον φέρουσιν ἢ εἰ ἀπὸ πρώτης ἀποθέμενοι τὸν νόμον φανερῶς ἐπλεονεκτοῦμεν.

(*l*) καὶ ᾠκοδόμησαν τῃ ἐκείνου γνώμῃ τὸ πάχος τοῦ τείχους, ὅπερ νῦν ἔτι δῆλόν ἐστι περὶ τὸν Πειραιᾶ· δύο γὰρ ἅμαξαι ἐναντίαι ἀλλήλαις τοὺς λίθους ἐπῆγον. ἐντὸς δὲ οὔτε χάλιξ οὔτε πηλὸς ἦν, ἀλλὰ ξυνῳκοδομημένοι μεγάλοι λίθοι καὶ ἐν τομῇ ἐγγώνιοι, σιδήρῳ πρὸς ἀλλήλους τὰ ἔξωθεν καὶ μολύβδῳ δεδεμένοι.

(*m*) χρὴ γὰρ τοὺς ἡγεμόνας, τὰ ἴδια ἐξ ἴσου νέμοντας,

τὰ κοινὰ προσκοπεῖν, ὥσπερ καὶ ἐν ἄλλοις ἐκ πάντων προτιμῶνται. ἡμῶν δὲ ὅσοι μὲν Ἀθηναίοις ἤδη ἐνηλλάγησαν, οὐχὶ διδαχῆς δέονται ὥστε φυλάξασθαι αὐτούς.

(Mss. ἐνηλλάγησαν.)

(*n*) χρόνιοί τε ξυνιόντες ἐν βραχεῖ μὲν μορίῳ σκοποῦσί τι τῶν κοινῶν, τῷ δὲ πλέονι τὰ οἰκεῖα πράσσουσι. καὶ ἕκαστος οὐ παρὰ τὴν ἑαυτοῦ ἀμελειαν οἴεται βλάψειν, μέλειν δέ τινι καὶ ἄλλῳ ὑπὲρ ἑαυτοῦ τι προϊδεῖν, ὥστε τῷ αὐτῷ ὑπὸ ἁπάντων ἰδίᾳ δοξάσματι λανθάνειν τὸ κοινὸν ἀθρόον φθειρόμενον.

2. Comment on :—

(*a*) κατὰ κώμας τῇ παλαίᾳ τῆς Ἑλλάδος τρόπῳ οἰκισθείσης.

(*b*) ὀλίγον χρόνον ξυνέμεινεν ἡ ὁμαιχμία.

(*c*) τὴν ἀληθεστάτην πρόφασιν.

(*d*) τὰς ναῦς ἐπλήρουν, ξεύξαντες τὰς παλαιὰς ὥστε πλοΐμους εἶναι.

(*e*) οἱ Κορίνθιοι ὀργῇ φέροντες τὸν πρὸς Κερκυραίους πόλεμον ἐναυπηγοῦντο.

(*f*) οὐ γὰρ ἐπὶ τῷ δοῦλοι ἀλλ' ἐπὶ τῷ ὁμοῖοι τοῖς λειπομένοις εἶναι ἐκπέμπονται.

(*g*) τῇ μὲν προτέρᾳ ἀπεδέξαντο τοὺς λόγους, ἐν δὲ τῇ ὑστεραίᾳ μετέγνωσαν.

(*h*) τῶν λεγόντων μᾶλλον ὑπενοεῖτε ὡς ἕνεκεν τῶν αὐτοῖς ἰδίᾳ διαφόρων λέγουσιν.

(*i*) δεδιότες περὶ τῷ χωρίῳ.

(*k*) εἰ καὶ δι' ὄχλου μᾶλλον ἔσται ἀεὶ προβαλλομένοις.

(*l*) γράψας τὴν ἐκ Σαλαμῖνος προάγγελσιν τῆς ἀναχωρήσεως καὶ τὴν τῶν γεφυρῶν, ἣν ψευδῶς προσεποιήσατο, τότε δι' αὐτὸν οὐ διάλυσιν.

3. Give a brief analysis of the contents of this book.

B.A. HONOURS.

GENERAL PAPER.

SATURDAY, APRIL 24TH:—2 TO 5 P.M.

1. Discuss the varieties of dialect employed by Attic writers and the influence of literature in determining the prevalence of a particular form.

2. The influence of the foreign or domestic politics of Athens on the choice and treatment of subjects by the tragedians.

3. Compare Greek and Latin in respect of
(*a*) the use of the infinitive,
(*b*) the use of the relative.

4. Explain and illustrate peculiarities attending the insertion or omission of ἂν in the following passages:—

(*a*) ὥστ' οὐκ ἂν αὐτὸν γνωρίσαιμ' ἂν εἰσιδών.

(*b*) ἔστι δ' ὁ παῖς περίσαμος· ἐν εἴκοσι πᾶσι μάθοις νιν.

(*c*) οὐκ ἔσθ' ὅστις οὐχ ἡγεῖτο τῶν εἰδότων δίκην με λήψεσθαι παρ' αὐτῶν, ἐπειδὰν τάχιστ' ἀνὴρ εἶναι δοκιμασθείην.

(*d*) ὅπου δ' Ἀπολλὼν σκαῖος ᾖ, τίνες σοφοί;

(*e*) τοῦτο γὰρ ἀθάνατον φωνᾶεν ἕρπει
εἴ τις εὖ εἴπῃ τι.

(*f*) οὔτ' ὄντα, οὔτ' ἂν γενόμενα, λογοποιοῦσι.

(*g*) οὐχ ἥκει, φάναι, οὐδ' ἂν ἥξει.

(*h*) οὐκ οἶδ' ἂν εἰ πείσαιμι.

5. Give instances of celebrated Greek authors who were also generals, mentioning the actions in which each took part.

6. Discuss the employment of metaphor in Greek Prose and Drama, contrasting with corresponding works in English Literature. Give a classified list of metaphors which you can recall in the Greek Tragedians.

7. Mention the principal epochs of Greek colonization; the States most famous for their colonies; and the chief distinctions between a Roman colony and (*a*) a Greek colony, (*b*) a cleruchy.

8. Discuss the construction of a Greek Theatre and the mode of presentation of a Greek Tragedy.

9. Give examples (with Latin and English parallels where possible) of:—Prolapsis, Zeugma, Nominativus pendens, and explain the proverbs:—*Διὸς Κόρινθος*—*Λήμνια ἔργα*—*δεύτερος πλοῦς*—*κολοιὸς ποτὶ κολοιόν*—*ὗς πρὸς Ἀθηνᾶν.*

10. Compare the leading characteristics and the general influence upon Hellas, of the Athenian, Spartan and Theban Supremacies.

FIRST YEAR.

ROMAN HISTORY—THE WARS WITH CARTHAGE.

Monday, 5th April:—Afternoon, 4 to 5.

1. Describe the causes which led to the First Punic War.

2. State what you believe to have been the main reasons why Hannibal failed in his attack on Rome.

3. Into what periods may the Second Punic War be conveniently divided? Give a brief account of each.

4. Sketch the progress of Rome's arms between the Second and the Third of the Wars with Carthage.

5. Add a very brief note to the following names of persons and places: Philopœmen, Ariminum, Regulus, Lilyboeum, Aemilius Paullus, Saguntum, Mummius, Capua, Gaius Flaminius, Pydna.

LATIN COMPOSITION.

FIRST YEAR.

1. What is meant by (*a*) Indirect Speech, (*b*) Indirect Request, and (*c*) Indirect Question? Give an example of each in English, and translate your example into Latin.

2. Explain—adding an example in each case—what is meant by Partitive Genitive, Accusative of Duration of Time, Locative, Genitive of Price, Impersonal Verb? What construction do those verbs take in the Passive, which govern a Dative in the Active? Give an example. Name 6 verbs governing a Dative.

3. What different ways are there of expressing a purpose in Latin? Give instances.
What different ways are there of translating "the art of writing letters"?

4. Translate into Latin:—
(1) Do not believe a Greek, even on his oath.
(2) I have not been persuaded.
(3) He asked me to tell you that he had gone to Rome.
(4) He asked me when I intended to set out. (For "intend" use verb "to be" followed by a Fut. Partic.).
(5) Caesar was slain by Brutus on the 15th of March.
(6) I am ashamed of the deed (*facinus*).
(7) They went to the river in order that they might die.
(8) Do not do this.
(9) Having taken the city, he departed.
(10) He has lived at Tarentum and Athens.
(11) The love of ruling men was inborn in Caesar.
(12) I taught Propertius letters.
(13) And he did not promise to praise Caesar.
(14) Very many things must be done by Caesar.
(15) Caesar ought to do many things.
(16) He gave me this knife as a present.
(17) He gave 2,000 sesterces for that slave.
(18) Attracted by the beauty of the cattle, Cacus attempted to carry off all the biggest of them into his cave.
(19) The city having been captured was burnt.
(20) Cicero accused Verres of extortion.
(21) The battle of Cannae was fought in the 538th year after the foundation of the city.

5. Give the construction of *potior, refert, opus, accuso, misereor, cum* (meaning "when"), *praeficere.*

6. Parse *exorsus, passi, oderis, fulsere, morere, obsitus, pransus, rere, libere.*

7. Mention any verbs done like capio, and any deponents done like "patior."

8. What numbers are indeclinable, and what are followed by the Gen. case?

9. Translate (1) He persuaded me to do this.
(2) He persuaded me that Gaius had returned.
(3) Dic ei ut veniat.
(4) Dic eum venire.

LATIN.

FIRST YEAR.

SALLUST, VIRGIL AND OVID.

1. *Translate* :—

(*a*) Scio ego, Quirites, plerosque non iisdem artibus imperium a vobis petere, et postquam adepti sunt gerere ; primo industrios, supplices, modicos esse, dein per ignaviam et superbiam aetatem agere. Sed mihi contra ea videtur ; nam quo pluris est universa respublica quam consulatus aut praetura, eo maiore cura illam administrari quam haec peti debere. Neque me fallit quantum cum maximo vestro beneficio negotii sustineam. Bellum parare simul, et aerario parcere, cogere ad militiam eos, quos nolis offendere, domi forisque omnia curare et ea agere inter invidos, occursantes, factiosos, opinione, Quirites, asperius est. Ad hoc, alii si deliquere, vetus nobilitas, maiorum fortia facta, cognatorum et affinium opes, multae clientelae, omnia haec praesidio adsunt ; mihi spes omnes in memet sitae, quas necesse est virtute et innocentia tutari ; nam alia infirma sunt.

(*b*) Saepibus in nostris parvam te roscida mala—
dux ego vester eram—vidi cum matre legentem.
Alter ab undecimo tum me iam acceperat annus ;
iam fragiles poteram ab terra contingere ramos.
Ut vidi, ut perii, ut me malus abstulit error !
Incipe Maenalios mecum, mea tibia, versus.
Nunc scio, quid sit Amor ; duris in cotibus illum
aut Tmaros, aut Rhodope, aut extremi Garamantes,
nec generis nostri peurum nec sanguinis edunt.

The metre of two of the above lines is irregular; state which lines these are and in what the irregularity consists.

(*c*) Quisquis ad haec vertit peregrinam littora puppim,
ille mihi de te multa rogatus abit :
quamque tibi reddat, si te modo viderit usquam,
traditur huic digitis charta notata meis.
Nos Pylon, antiqui Neleia Nestoris arva,
misimus. Incerta est fama remissa Pylo.

Misimus et Sparten : Sparte quoque nescia veri.
Quas habitas terras, aut ubi lentus abes ?
Utilius starent etiam nunc moenia Phoebi.
Irascor votis heu levis ipsa meis !
Scirem ubi pugnares, et tantum bella timerem,
et mea cum multis iuncta querella foret.

(*d*) Vix me continui, quin sic laniata capillos
clamarem, " meus est," iniceremque manus.
Laese pater gaude. Colchi gaudete relicti.
Inferias umbrae fratris habete mei.
Deseror, amissis regno patriaque domoque,
Coniuge qui nobis omnia solus erat.
Serpentes igitur potui taurosque furentes,
unum non potui perdomuisse virum.
Quaeque feros pepuli doctis medicatibus ignes,
non valeo flammas effugere ipsa meas.
Ipsi me cantus herbaeque artesque relinquunt.
Nil dea, nil Hecates sacra potentis agunt.
Non mihi grata dies. Noctes vigilantur amarae,
et tener a misero pectore somnus abit.

2. State as briefly as possible what allusion is made in the " Jugurtha " to the following persons or places :—
Bocchus, Adherbal, Sulla, Numantia.

3. What do you remark peculiar in the grammar of :—

(*a*) Prope iam adeptam victoriam retinere cupit.
(*b*) Paullatim prope ad summum montis egressus est.
(*c*) Ubi ex nuntiis, quae Ligus egerat, cognovit.
(*d*) Eumque edocet, quae ageret.
(*e*) Saepe levi somnum suadebit inire susurro.

4. Explain the allusions in :—

(*a*) Hic lacer admissos terruit Hector equos.
(*b*) Ille per insidias paene est mihi nuper ademptus.
(*c*) Lumina custodis succumbere nescia somno.
(*d*) Aurea barbarica stat dea facta manu.
(*e*) Symplegades elisissent.
(*f*) Quid referam Peliae natas pietate nocentes.
(*g*) Per avitae lumina flammae.
(*h*) Doris amara suam non intermisceat undam.

(*i*) Sola Sophocleo tua carmina digna cothurno.
(*j*) Inflatum hesterno venas, ut semper, Iaccho.
(*k*) Alter erit tum Tiphys.

5. What is meant by "dactyl," "spondee," "caesura"? Scan the first four lines of Qu. I (*d*) (from "vix" to "mei"), dividing them into feet and marking the quantity of each syllable.

Quote the next line to each of the following :—

(*a*) Quae nemora aut qui vos saltus habuere, puellae—
(*b*) Propter aquae rivum viridi procumbit in ulva—
(*c*) Populus Alcidae gratissima, vitis Iaccho—
(*d*) Hac ibat Simois, haec est Sigeia tellus—
(*e*) Increpet usque licet. Tua sum tua dicar oportet—
(*f*) Hoc illic Medea fui, nova nupta quod hic est—
(*g*) Dum ferrum flammaeque aderunt sucusque veneni.—

Translate :—

(*a*) In Pamphylia est Melas nauigabilis fluuius, oppidum Sida et alter fluuius Eurimedon. Magna apud eum Cimonis Atheniensium ducis aduersus Phoenicas et Persas naualis pugna atque uictoria fuit. Mare, quo pugnatum est ex edito admodum colle prospectat Aspendos, quam Argivi condiderant, possedere finitimi. Deinde alii duo validissimi fluuii Oestros et Cataractes. Oestros nauigari facilis, hic quia se praecipitat, ita dictus. Inter eos Perga est oppidum et Dianae, quam ab oppido Pergeam vocant, templum.

(*b*) Fame coacta vulpes alta in vinea
uvam appetebat, summis saliens viribus :
quam tangere ut non potuit, discedens ait :
nondum matura est : nolo acerbam sumere.
Qui, facere quae non possunt, verbis elevant,
adscribere hoc debebunt exemplum sibi.

(*c*) Sed quis illic est, quem video procul ? Estne Hegio, tribulis noster ? Si satis cerno, is hercle est ! Vah ! homo amicus nobis iam inde a puero. Di boni, ne illuismodi iam nobis magna civium penuria est. Homo antiqua virtute ac fide ! Haud cito mali quid ortum ex hoc sit publice. Quam gaudeo, ubi etiam huius generis reliquias restare video ! Vivere etiam nunc lubet. Opperiar hominem hic, ut salutem et conloquar.

INTERMEDIATE EXAMINATION.

HORACE—SELECTED ODES.

MONDAY, APRIL 5TH.

To be substituted at Stanstead College for Cicero's Second Philippic.

I. Translate Horace, Odes i, vii :—

(*a*). Albus ut obscuro deterget nubila caelo
Saepe Notus neque parturit imbres
Perpetuo, sic tu sapiens finire memento
Tristitiam vitaeque labores
Molli, Plance, mero, seu te fulgentia signis
Castra tenent seu densa tenebit
Tiburis umbra tui. Teucer Salamina patremque
Cum fugeret tamen uda Lyaeo
Tempora populea fertur vinxisse corona,
Sic tristes affatus amicos :
Quo nos cunque feret melior fortuna parente
Ibimus, o socii comitesque.
Nil desperandum Teucro duce et auspice Teucro ;
Certus enim promisit Apollo
Ambiguam tellure nova Salamina futuram.
O fortes pejoraque passi
Mecum saepe viri, nunc vino pellite curas ;
Cras ingens iterabimus aequor.

(*b*) Frustra cruento Marte carebimus
Fractisque rauci fluctibus Hadriae,
Frustra per auctumnos nocentem
Corporibus metuemus Austrum :
Visendus ater flumine languido
Cocytos errans et Danai genus
Infame damnatusque longi
Sisyphus Aeolides laboris.
Linquenda tellus et domus et placens
Uxor, neque harum quas colis arborum
Te praeter invisas cupressos
Ulla brevem dominum sequetur.
Absumet heres Caecuba dignior
Servata centum clavibus, et mero
Tinget pavimentum superbo
Pontificum potiore coenis.

Give the scheme of the metre in each passage, and scan the last four lines in each.

II. Translate and explain:—

(*a*) Audax Iapeti genus
Ignem fraude mala gentibus intulit.
Post ignem aetheria domo
Subductum macies et nova febrium
Terris incubuit cohors,
Semotique prius tarda necessitas
Leti corripuit gradum.

(*b*) Romulum post hos prius an quietum
Pompili regnum memorem an superbos
Tarquini fasces dubito, an Catonis
Nobile letum.

(*c*) Deliberata morte ferocior,
Saevis Liburnis scilicet invidens
Privata deduci superbo
Non humilis mulier triumpho.

(*d*) Tecum Philippos et celerem fugam
Sensi relicta non bene parmula,
Cum fracta virtus et minaces
Turpe solum tetigere mento.

(*e*) Destrictus ensis cui super impia
Cervice pendet non Siculae dapes
Dulcem elaborabunt saporem,
Non avium citharaeque cantus
Somnum reducent.

(*f*) Fertur pudicae conjugis osculum
Parvosque natos ut capitis minor
Ab se removisse et virilem
Torvus humi posuisse vultum.

III. Give the meaning of:—
(*a*) Spatio brevi Spem longam reseces.
(*b*) Spiritum Graiae tenuem Camenrae.
(*c*) Virtus repulsae nescia sordidae.
(*d*) Dis te minorem quod geris imperas.
(*e*) Pulvis et umbra sumus.

IV. State your impressions of the personality of Horace, as derived from the study of his Odes.

INTERMEDIATE EXAMINATION.

LATIN COMPOSITION AND UNSEEN.

1. For *Latin* Prose.

At the time when Ancus Marcius was king, there lived in the town of Tarquinii, in the land of the Etruscans, a rich and prudent man called Lucumo, the son of Demaratus, who had been driven by the tyrant Kypselus out of his native town and had fled to Etruria. Now, because Lucumo was the son of a stranger, the people of Tarquinii disliked him and refused him a place of honor in their town. His wife Tanaquil therefore advised him to leave Tarquinii, and to emigrate to Rome, where strangers were kindly received. Therupon Lucumo set out for Rome. When he had come to the hill Janiculus, near the town, an eagle shot down from the air, and took his hat from his head, and flew away with it; and after wheeling about for a time over the carriage in which Lucumo and his wife Tanaquil sat, the bird flew down again and replaced the hat on the head of Lucumo.

2. Give the ordinary construction of cum (meaning "when"), quanquam, postquam, dum; when does "dum" take a Subj. ?

Translate :—

(1) He believes that I ought not to have been persuaded to do this.

(2) He was born at Tarentum and came to Rome: he has lived 3 years at Philippi.

What different ways are there of expressing in Latin the following sentence :—"He set out to besiege the city" ?

What is meant by an Indirect Question : give an example in Latin and English.

How is "by a person" translated ?

3. Translate :—

(*a*) Oneravit hunc dolorem nuntius mortis Andromachi, quem praefecerat Syriae : vivum Samaritae cremaverant. Ad cuius interitum vindicandum, quanta maxima celeritate potuit, contendit, advenientique sunt traditi tanti sceleris auctores. Andromacho deinde Memnona substituit, adfectis supplicio, qui praetorem interemerant. Tyrannos—inter eos Methymnaeorum

Aristonicum et Chrysolaum—popularibus suis tradidit : quos illi ob iniurias tortos necaverunt. Atheniensium, deinde Rhodiorum et Chiorum legatos audit. Athenienses victoriam gratulabantur, et ut captivi Graecorum suis restituerentur, orabant : Rhodii et Chi de praesidio querebantur. Omnes aequa desiderare visi impetravere. Mitylenaeis quoque ob egregiam in partes suas fidem et pecuniam quam in bellum impenderant obsides reddidit et magnam regionem finibus eorum adiecit. Cypriorum quoque regibus qui et a Dario defecerant ad ipsum et oppugnanti Tyrum miserant classem, pro merito honos habitus est.

(*b*) Caussa quae sit videtis ; nunc quid agendum sit considerate. Primum mihi videtur de genere belli, deinde de magnitudine, tum de imperatore deligendo esse dicendum. Genus est belli eiusmodi quod maxime vestros animos excitare atque inflammare ad persequendi studium debeat, in quo agitur populi Romani gloria, quae vobis a maioribus cum magna in omnibus rebus, tum summa in re militari tradita est, agitur salus sociorum atque amicorum, pro qua multa maiores vestri magna et gravia bella gesserunt, aguntur certissima populi Romani vectigalia et maxima, quibus amissis et pacis ornamenta et subsidia belli requiretis, aguntur bona multorum civium, quibus est a vobis et ipsorum et reipublicae caussa consulendum.

(*c*) Divis orte bonis, optime Romulae
custos gentis, abes iam nimum diu ;
maturum reditum pollicitus patrum
sancto concilio redi.
Lucem redde tuae, dux bone patriae :
instar veris enim voltus ubi tuus
adfulsit populo, gratior it dies
et soles melius nitent.
Ut mater iuvenem, quem Notus invido
flatu Carpathii trans maris aequora
cunctantem spatio longius annuo
dulci distinet a domo,
votis ominibusque et precibus vocat,
curvo nec faciem litore dimovet ;
sic desideriis icta fidelibus
quaerit patria Caesarem.

What is the name of the metre here employed ?

INTERMEDIATE EXAMINATION.

CICERO, *Second Philippic ;* VIRGIL, *Aeneid, Bk. IX.*

MONDAY, APRIL 5TH :—MORNING, 9 TO 12.

1. Translate and comment upon the words in *Italics* :—

(*a*) At etiam litteras, quas me sibi misisse *diceret*, recitavit homo et humanitatis expers et vitae communis ignarus. Quis enim umquam, qui paulum modo bonorum consuetudinem *nosset*, litteras ad se ab amico missas offensione aliqua interposita in medium protulit palamque recitavit ? Quid est aliud tollere ex vita vitae societatem, tollere amicorum colloquia absentium ?

(*b*) Quid est ? num conturbo te ? Non enim fortasse satis quae diiunctius dicuntur intelligis. Sed tamen haec summa est conclusionis meae ; quoniam *scelere* a te liberati sunt, ab eodem te amplissimis praemiis dignissimos iudicatos. Itaque iam retexo orationem meam. Scribam ad illos ut, si qui forte quod a te mihi obiectum est *quaerent sitne* verum, ne qui negent. Etenim vereor ne aut *celatum* me illis ipsis non honestum ; aut invitatum *refugisse* mihi sit turpissimam.

(*c*) Ubi est *septiens miliens*, quod est in tabulis, quae sunt *ad Opis ? funestae illius* quidem *pecuniae*, sed tamen, quae nos, si eis, quorum erat, non redderetur, a tributis posset vindicare. Tu autem quadringentiens *sestertium*, quod Idibus Martiis debuisti, quonam modo ante Kalendas Aprilis debere *desisti ?* Sunt *ea* quidem innumerabilia, quae a tuis emebantur non insciente te : sed unum egregium de rege *Deiotaro* decretum in *Capitolium* fixum.

II. Translate and comment on :—

(*a*) Duo tamen tempora inciderunt quibus aliquid contra Caesarem Pompeio suaserim. Ea velim reprehendas, si potes : unum, ne quinquennii imperium Caesari prorogaret, alterum ne pateretur ferri ut absentis eius ratio haberetur.

(*b*) Si enim fuissem, non solum regem sed etiam regnum de re publica sustulissem ; et si meus ille stilus fuisset, ut dicitur, mihi crede non solum unum actum sed totam fabulam confecissem.

(*c*) In te id decrevit senatus, et quidem inclumis, nondum tot luminibus exstinctis, quod in hostem togatum decerni est solitum more maiorum.

(*d*) Ter depugnavit Caesar sum civibus, in Thessalia, Africa, Hispania.

IIII. Give thse meaning of *praevaricator, honoris causa aliquem nominare, iliud Cassianum cui bono, sector, rem indictā causa iudicare, me dius fidius, sordidata mancipia, sortitio praerogativae.*

IV. Translate and write short explanatory notes on italcized words :—

(*a*) Atque ea diversa penitus dum parte geruntur,
Irem de caelo misit Saturnia Iuno
audacem ad *Turnum*, luco tum forte parentis
Pilumni Turnus cacrata valle sedebat.

(*b*) Talis in *Euboico Baiarum* litore quondam
saxea pila cadit, magnis quam molibus ante
constructam ponto iaciunt ; sic illa ruinam
prona trahit penitusque vadis inlisa recumbit :
miscent se maria, et nigrae attolluntur harenae :
tum sonitu *Prochyta* alta tremit durumque cubile
Inarime Iovis imperiis imposta *Typhoco*.

V. Translate, and scan the following lines :—

Formam tum vertitur oris
antiquom in Buten (hic Dardanio Anchisae
armiger ante fuit fidusque ad limina custos
tum comitem Ascanio pater addidit : ibat Apollo
omnia longaevo similis, vocemque coloremque
et crines albos et saeva sonoribus arma.

VI. Comment upon the following, giving the meaning : *volvenda dies, Capitoli immobile saxum, adcelerant acta pariter testudine, digna atque indigna relatu, fandi fictor Ulixes, omne aevum ferro teritur, macte nova virtute, acerba tuens.*

VII. (*For McGill Students only*).

Translate:—

Sic te diva potens Cypri,
Sic fratres Helenae, lucida sidera,
Ventorumque regat pater,
Obstrictis aliis, praeter Iapyga,
Navis, quae tibi creditum
Debes Virgilium finibus Atticis

Reddas incolumem, precor,
Et serves animae dimidium meae.
Illi robur et aes triplex
Circa pectus erat, qui fragilem truci
Commisit pelago ratem
Primus, nec timuit praecipitem Africum
Decertantem Aquilonibus,
Nec tristes Hyadas, nec rabiem Noti
Quo non arbiter Hadriae
Maior, tollere seu ponere vult freta.

Describe the metre in which this ode is written.

VIII. (*For Morrin Students only*).

Translate :—

Euryalum tenebrae ramorum onerosaque praeda
Impediunt fallitque timor regione viarum ;
Nisus abit, Iamque inprudens evaserat hospes
Atque locos, (qui post Albae de nomine dicti
Albani, tum rex stabula alta Latinus habebat,)
Ut stetit et frustra absentem respexit amicum
" Euryale infelix, qua te regione reliqui ?
" Quave sequar, rursus perplexum iter omne revolvens.
" Fallacis silvae ? " Simul et vestigia retro
Observata legit dumisque silentibus errat.

State briefly the subject of this book.

INTERMEDIATE EXAMINATION.

ROMAN HISTORY AND LITERATURE.

MONDAY, APRIL 5TH:—2 TO 4 P.M.

1. Define the nature of an Agrarian Law, with special reference to the conditions which the Gracchi sought to reform.

2. Sketch the subsequent history of the tribunate, as connected with the names of (*a*) Saturninus, (*b*) Livius Drusus, (*c*) Sulpicius, and (*d*) Clodius.

3. Give an account of the origin of the Social War. On what conditions was peace concluded ?

4. Narrate briefly the events which led to Sulla's dictatorship, and describe the general character of his legislation.

5. The career of Pompeius down to the date of his return from the East.

6. Why was Cæsar's murder a political failure?

7. Describe the character of Cicero's literary activity.

8. Give a short account of the origin and growth of Roman satire.

9. Compare the claims of Horace and Virgil to be considered the representative poet of the Augustan Age.

10. Add a brief note to the following names: Varro, Ennius, Livius Andronicus, Lucretius, Seneca, Martial, Lucan, Nævius.

INTERMEDIATE EXAMINATION. LATIN COMPOSITION.

ADDITIONAL QUESTION.

Translate into Latin:—

(*a*) Cæsar was informed that the enemy arrived on the fourth day.

(*b*) He afterwards ordered his legions to quit the camp.

(*c*) Cicero never doubted that Antony would address the senate.

(*d*) Cicero promised to send his speech to Brutus.

(*e*) Cicero must hold the office till the conspiracy is suppressed.

(*f*) I cannot but think that I have made a mistake.

(*g*) If we were to act otherwise we should be regarded as fools.

(*h*) It was owing to Cicero that Catiline did not get possession of Rome.

THIRD YEAR.

HISTORY OF ROME (TO 390 B.C.)

MONDAY, APRIL 5TH:—4 TO 5 P.M.

Not more than four questions to be attempted.

1. Name the divisions of Central Italy, with their chief cities.

2. Briefly describe the three races which inhabited Italy from the earliest times to which our knowledge extends.

3. Give a brief sketch of the foundations of Rome, of the Union of Romans and Sabine, and of Rome's ascendancy in Latium.

4. Write a note on the following topics: The Senate under the Kings; The Comitia Centuriata; The Battle of Lake Regillus; The Story of Coriolanus.

5 Give an account of the Conquest of Veii.

6. Sketch the development of plebeian rights, naming and briefly describing the laws passed to establish political equality between the patricians and plebeians.

LATIN PROSE COMPOSITION AND TRANSLATION AT SIGHT.

THIRD YEAR.

LATIN.

MONDAY, APRIL 5TH:—AFTERNOON, 2 TO 4.

1. When Octavianus was at Samos, after the battle of Actium, he ordered the prisoners to be summoned for trial. Among others there was brought before him an old man named Metellus, oppressed with age and infirmities, and so much disfigured by a long beard and ragged clothes, that his son who happened to be one of the judges, could scarcely recognize him. When, however, he at length recollected the old man's features, he was so far from being ashamed to own his father, that he ran to embrace him, and wept over him bitterly. Then returning towards the tribunal, "Caesar," says he, "my father has been your enemy, and I your officer: he deserves to be punished, and I to be rewarded. The favor I desire of you is, either to save him on my account, or to order me to be executed with him."

2. Translate:—

Scriptae sunt litterae a. u. c. 704.

M. CATO S. D. M. CICERONI IMP.

(*a*) Quod et res publica me et nostra amicitia hortatur, libenter facio, ut tuam virtutem, innocentiam, diligentiam cognitam in maximis rebus, domi togati, armati foris, pari industria administra gaudeam. Itaque quod pro meo iudicio facere potui, ut innocentia consilioque tuo defensam provinciam, servatum Ariobarzanis cum ipso rege regnum, sociorum revocatam ad studium imperii nostri voluntatem sententia mea et

decreto laudarem, feci. Supplicationem decretam, si tu, qua in re nihil fortuito, sed summa tua ratione et continentia rei publicae provisum est, dis immortalibus gratulari nos quam tibi referre acceptum mavis, gaudeo. Quod si triumphi praerogativam putas supplicationem et idcirco casum potius quam te laudari mavis, neque supplicationem sequitur semper triumphus et triumpho multo clarius est senatum iudicare potius mansuetudine et innocentia imperatoris provinciam quam vi militum aut benignitate deorum retentam atque conservatam esse : quod ego mea sententia censebam. Atque haec ego idcirco ad te contra consuetudinem meam pluribus scripsi, ut, quod maxime volo, existimes me laborare ut tibi persuadeam me et voluisse de tua maiestate, quod amplissimum sim arbitratus et quod tu maluisti factum esse gaudere. Vale et nos dilige et instituto itinere severitatem diligentiamque sociis et rei publicae praesta.

(*b*) Par fuit his aetas et amor.: quorum alter Orestes,
Alter erat Pylades ; nomina fama tenet.
Protinus immitem Triviae ducuntur ad aram,
Evincti geminas ad sua terga manus.
Spargit aqua captos lustrali Graia sacerdos.
Ambiat ut fulvas infula longa comas.
Dumque parat sacrum, dum velat tempora vittis,
Dum tardae caussas invenit usque morae ;
" Non ego crudelis ; iuvenes ignoscite ; " dixit :
" Sacra suo facio barbariora loco.
Ritus is est gentis. Qua vos tamen urbe venitis ?
Quove parum fausta puppe petistis iter ? "
Dixit : et audito patriae pia nomine virgo
Consortes urbis comperit esse suae.
" Alter at e vobis," inquit, " cadat hostia ; sacri
Ad patrias sedes nuntius alter eat."
Ire iubet Pylades carum periturus Oresten :
Hic negat : inque vicem pugnat uterque mori.
Exstitit hoc unum, quo non convenerit illis ;
Cetera par concors et sine lite fuit.

THIRD YEAR.

LATIN.

TACITUS, AGRICOLA ; CATULLUS AND PROPERTIUS (Selections) ; HORACE, SELECTED SATIRES AND EPISTLES.

MONDAY, APRIL 5TH :—MORNING, 9 TO 12.

1. Translate :—

Bona fortunaeque in tributum, ager atque annus in frumentum, corpora ipsa ac manus silvis ac paludibus emuniendis inter verbera ac contumelias conteruntur. Nata servituti mancipia semel veneunt, atque ultro a dominis aluntur ; Britannia servitutem suam quotidie emit, quotidie pascit. Ac sicut in familia recentissimus quisque servorum etiam conservis ludibrio est, sic in hoc orbis terrarum vetere famulatu novi nos et viles in excidium petimur.

2. Comment on : *ager et annus, paludibus emuniendis, mancipia.* From whose speech is this extract taken ? Give the circumstances.

3. Translate, and comment on italicized expressions :—

(*a*) Phaselus ille, quem videtis, hospites,
Ait *navium celerrimus,*
Neque ullius natantis impetum trabis
Nequisse praeterire, sive palmulis
Opus foret volare sive linteo.

(*b*) Puto esse ego illi milia aut decem aut plura
Perscripta, nec sic ut fit in *palimpsesto*
Relata : *chartae regiae,* novei libri,
Novi *umbilici, lora rubra, membrana*
Directa plumbo, et pumice omnia aequata.
Haec cum legas tu, bellus ille et urbanus
Suffenus unus caprimulgus aut fossor
Rursus videtur.

(*c*) Aut si quis posita iudex sedet Aeacus urna,
In mea sortita vindicet *ossa* pila :
Adsideant *fratres,* iuxta Minoida sellam

Eumenidum intento *turba* severa foro :
Sisyphe, mole vaces, taceant *Ixionis* orbes,
Fallax *Tantaleo* corripiare liquor,
Cerberus et nullas hodie petat improbus umbras,
Et iaceat tacita lapsa catena sera.

4. Describe the metres of the above passages, and scan the first lines of (*a*) and (*b*), and the last two of (*c*).

5. Translate :—

(*a*) Ventum erat ad Vestae, quarta iam parte diei,
praeterita, et casu tunc respondere vadato,
debebat ; quod ni fecisset, perdere litem.
"Si me amas," inquit, "paulum hic ades." Interea, si
aut valeo stare aut novi civilia iura ;
et propero quo scis." "Dubius sum quid faciam," inquit,
tene relinquam an rem." "Me, sodes." "Non faciam," ille,
et praecedere coepit.
At simul atras

(*b*) ventum est Esquilias, aliena negotia centum
per caput et circa saliunt latus. "Ante secundam
Roscius orabat sibi adesses ad Puteal cras."
De re communi scribae magna atque novate
orabant hodie meminisses, Quinte, reverti.
"Imprimat his cura Maecenas signa tabellis."

(*c*) Si foret in terris, rideret Democritus, seu
diversum confusa genus panthera camelo,
sive elephas albus vulgi converteret ora ;
spectaret populum ludis attentius ipsis,
ut sibi praebentem mimo spectacula plura ;
scriptores autem narrare putaret asello
fabellam surdo.

6. Write explanatory notes on :—

(*a*) ad Vestae : vadato : fecisset : sodes. (*b*) atras Esquilias; adesses : Puteal : Quinte : imprimat. (*c*) Democritus : diversum.. .. .. ..camelo ; ludis : asello surdo.

Scan the fourth line of Extract (*a*).

7. (*a*) What was the date of the publication of the Agricola of Tacitus ? How is the date determined ? Write briefly on the style of Tacitus.

(*b*) Give a sketch of the Life of Catullus.

THIRD YEAR HONOURS IN CLASSICS.

LATIN TRANSLATION AT SIGHT.

Translate :—

(*a*) Victa igitur inimicorum malevolentia et obtrectatione, triumphavit Paullus de Perseo rege et Macedonibus per triduum, A.D. IV. et III. et pridie Kal. Decembr. Fuit hic triumphus sive magnitudinem victi regis, sive speciem simulacrorum, sive pecuniae vim spectes, longe magnificentissimus, ut omnium ante actorum comparationem amplitudine superaret. Populus exstructis per forum et cetera urbis loca, qua traduci pompam oportebat, tabulatis theatrorum in modum, spectavit in candidis togis. Aperta templa omnia et sertis coronata ture fumabant. Lictores satelle, tesque confluentem temere turbam et vage discurrentem summoventes in medio, patentes late vias vacuasque praebebant. Quum in tres, ut diximus dies distributa esset pompa spectaculi, primus dies vix suffecit transvehendi signis tabulisque captivis, in CCI. currus impositis. Sequenti die multis plaustris translatum, quidquid Macedonicorum armorum pulcherrimum et magnificentissimum fuit, quae et ipsa ferri aut aeris recens tersi nitore splendebant, et ita structa erant inter se, ut cum acervatim potius cumulata quam artificiose digesta, viderentur, miram quandam hanc ipsa velut temeraria et fortuita concursione speciem objierent oculis.

(*b*) Et quoniam pecunias aliorum despicis, de tuis divitiis intolerantissime gloriaris, volo uti mihi respondeas, fecerisne foedera tribunus plebis cum civitatibus, cum regibus, cum tetrarchis, erogarisque pecunias ex aerario tuis legibus? eripuerisne partes illo tempore carissimas partim a Cæsare, partim a publicanis? Quae quum ita sint, quaero ex te, sisne ex pauperrimo dives factus illo ipso anno, quo lex lata est de pecuniis repetundis acerrima: ut omnes intelligere possent, a te non modo nostra acta, quos tyrannos vocas, sed etiam amicissimi tui legem esse contemptam: apud quem tu etiam nos criminari soles, qui illi fumus amicissimi, quum tu ei contumeliosissime toties maledicas, quoties te illi affinem esse dicis.

(*c*) Vir fuit hic, ortu Samius: sed fugerat una
Et Samon et dominos, odioque tyrannidis exsul
Sponte erat. Isque, licet cœli regione remotos,
Mente deos adiit, et quæ natura negabat
Visibus humanis, oculis ea pectoris hausit.
Cumque animo, et vigili perspexerat omnia cura,
In medium discenda dabat: cœtumque silentum,
Dictaque mirantum, magni primordia mundi,
Et rerum causas, et quid natura, docebat,
Quid deus: unde nives: quæ fulminis esset origo:
Jupiter an venti discussa nube tonarent:
Quid quateret terras: qua sidera lege mearent:
Et quodcunque latet. Primusque an imaliamensis

Arcuit imponi: primus quoque talibus ora
Docta quidem solvit, sed non et credita, verbis:
Parcite, mortales, dapibus temerare nefandis
Corpora: sunt fruges, sunt deducentia ramos
Pondere poma suo, tumidæque in vitibus uvæ:
Sunt herbæ dulces: sunt quæ mitescere flamma
Mollirique queant: nec vobis lacteus humor
Eripitur, nec mella thymi redolentia florem.

THIRD YEAR HONOURS IN CLASSICS.

LUCRETIUS, *Selections*: VIRGIL, *Æneid, Book XII.*

WEDNESDAY, APRIL 7TH:—9 TO 12 A.M.

1. Translate:—

(*a*) Principio venti vis verberat incita pontum
ingentisque ruit navis et nubila differt,
interdum rapido percurrens turbine campos
arboribus magnis sternit montisque supremos
silvifragis vexat flabris: ita perfurit acri
cum fremitu saevitque minaci murmure ventus.
sunt igitur venti, nimirum, corpora caeca,
quae mare, quae terras, quae denique nubila caeli
verrunt ac subito vexantia turbine raptant,
nec ratione fluunt alia stragemque propagant,
et cum mollis aquae fertur natura repente
flumine abundanti, quam largis imbribus auget
montibus ex altis magnus decursus aquai,
fragmina coniciens silvarum arbustaque tota,
nec validi possunt pontes venientis aquai
vim subitam tolerare: ita magno turbidus imbri
molibus incurrit, validis cum viribus, amnis,
dat sonitu magno stragem, volvitque sub undis
grandia saxa, ruunt quae quidquid fluctibus obstat.

(*b*) Denique si vocem rerum natura repente
mittat et hoc alicui nostrum sic increpet ipsa,
'quid tibi tanto operest, mortalis, quod nimis aegris
luctibus indulges? quid mortem congemis ac fles?
nam gratis*ne* fuit tibi vita ante acta priorque,
et non omnia pertusum congesta quasi in vas
commoda perfluxere atque ingrata interiere:
cur non ut plenus vitae conviva recedis,
aequo animoque capis securam, stulte, quietem?

sin ea quae fructus cumque es periere profusa,
vitaque in offensust, cur amplius addere quaeris,
rursum quod pereat male et ingratum occidat omne;
non potius vitae finem facis atque laboris?
nam tibi praeterea quod machiner inveniamque,
quod placeat, nil est: eadem sunt omnia semper.
si tibi non annis corpus iam marcet et artus
confecti languent, eadem tamen omnia restant.
omnia si pergas vivendo vincere sacila,
atque etiam potius, si numquam sis moriturus,'
quid respondemus, nisi iustam intendere litem
naturam et veram verbis exponere causam?

(*c*) Turnus, ut Aenean cedentem ex agmine vidit
Turbatosque duces, subita spe fervidus ardet;
Poscit equos atque arma simul, saltuque superbus
Emicat in currum, et manibus molitur habenas.
Multa virum volitans dat fortia corpora leto;
Seminecis volvit multos, aut agmina curru
Proterit, aut raptas fugientibus ingerit hastas.
Qualis apud gelidi cum flumina concitus Hebri
Sanguineus Mavors clipeo increpat, atque furentis
Bella movens inmittit equos; illi aequore aperto
Ante Notos Zephyrumque volant; gemit ultima pulsu
Thraca pedum; circumque atrae Formidinis ora,
Iraeque, Insidiaeque, dei comitatus, aguntur:
Talis equos alacer media inter proelia Turnus
Fumantis sudore quatit, miserabile caesis
Hostibus insultans; spargit rapida ungula rores
Sanguineos, mixtaque cruor calcatur arena.

I. Translate and comment on :—

(*a*) ergo vivida vis animi pervicit, et extra
processit longe flammantia moenia mundi
atque omne immensum peragravit mente animoque.

(*b*) quorum Acragantinus cum primis Empedocles est
insula quem triquetris terrarum gessit in oris,
quam fluitans circum magnis anfractibus aequor
Ionium glaucis aspargit virus ab undis.

(*c*) qualibus in tenebris vitae quantisque periclis
degitur hoc aevi quodcumquest!

(*d*) haud, ut opinor, enim mortalia saecla superne
aurea de caelo demisit funis in arva.

(*e*) hic Acherusia fit stultorum denique vita.

(*f*) Quam pro me curam geris, hanc precor, optume, pro me
Deponas, letumque sinas pro laude pacisci.

(*g*) En, omnes et Troes et Arcades hi sunt,
Fatalisque manus, infensa Etruria Turno.

(*h*) Sit Latium, sint Albani per saecula reges,
Sit Romana potens Itala virtute propago;
Occidit, occideritque sinas cum nomine Troia.

III. (1) Give the meaning of *daedalus*, *Acheusia templa*, *stilicidium*, *vescus*, *Idaea mater*, *parentare*, *obscenae volucres lepor*.

(2) Give a short statement of the Motive and Main Purpose of the *De Rerum Natura*.

(3) What indications of the poet's personal characteristics can you gather from his work?

THIRD YEAR HONOURS IN CLASSICS.

LATIN PROSE COMPOSITION.

TUESDAY, 6TH APRIL:—2 TO 4 P.M.

Translate into Latin prose:—

The unfortunate noble thus suddenly received the information that his death-sentence had been pronounced, and that its execution was fixed for the next morning. He read the paper through without flinching, and expressed astonishment rather than dismay at its tidings. Exceedingly sanguine by nature, he had never believed, even after his nine months' imprisonment, in a fatal termination to the difficulties in which he was involved. Afterwards with a natural burst of indignation he exclaimed that it was indeed a cruel and unjust sentence. He protested that he had never in his whole life wronged his majesty, certainly never so deeply as to deserve such a punishment. All that he had done had been with loyal intentions. The king's true interest had been his constant aim. Nevertheless, if he had fallen into error, he prayed to God that his death might wipe away his misdeeds, and that his name might not be dishonoured nor his children brought to shame. His beloved wife and innocent children were to endure misery enough by his death and the confiscation of his estates. It was at least due to his long services that they should be spared further suffering.

B.A. ORDINARY.

LATIN.

LATIN PROSE COMPOSITION AND TRANSLATION AT SIGHT.

MONDAY, APRIL 5TH, 1897:—AFTERNOON, 2 TO 4.

1. Translate into Latin:—

(*a*) Sallying out of the house, he called on the citizens of London, if they either valued his life, or wished to preserve the Kingdom from the Dominion of the Spaniards, to take arms and to follow his standard. He advanced towards the palace with an intention to drive Cecil and his faction out of the Queen's presence, and to obtain a declaration of the Scottish King's right of succession. But though almost adored by the citizens, not a man would join him in this wild enterprise. Dispirited by their indifference, deserted by some of his own attendants, and almost surrounded by the troops which marched against him under different leaders into the city, he retreated into his own house, and there surrendered to his enemies.

2. Translate into English:—

(*a*) Scipio, nisi in primo pavore, priusquam colligerentur animi, transacta res esset, lentiorem fore munitae urbis oppugnationem ratus, interrogat milites, satin aequo animo paterentur ab altero cornu castra capta esse, se victores pelli a portis urbis. Reclamantibus universis primus ipse scuto super caput elato pergit ad portam, secuti alii testudine facta in urbem perrumpunt, deturbatisque Samnitibus quae circa portam erant muri occupavere: penetrare in interiora urbis, quia pauci admodum erant, non audent. Haec primo ignorare consul, et intentus recipiendo exercitui esse; iam enim praeceps in occasum sol erat, et appetens nox periculosa et suspecta omnia etiam victoribus faciebat. Progressus longius ab dextra capta castra videt, ab laeva clamorem in urbe mixtum pugnantium ac paventium fremitu esse.

POMPEII SEPULCRUM.

(b) Tunc, ne levis aura retectos
auferret cineres, saxo compressit arenam :
ne taque ne bustum religato fune moveret,
inscripsit sacrum semiusto stipite nomen :
hic situs est Magnus. Placet hoc, Fortuna, sepulcrum
dicere Pompeii, quo condi maluit illum
quam terra caruisse socer ? temeraria dextra,
cur obicis Magno tumulum manesque vagantes
includis ? situs est qua terra extrema refuso
pendet in oceano. Romanum nomen et omne
imperium Magno est tumuli modus, obrue saxa
crimine plena deum. si tota est Herculis Oete
et iuga tota vacant Bromio[1] Nyseia,[2] quare
unus in Aegypto Magno lapis ? omni Lagi[3]
arva tenere potest si nullo cespite nomen
haeserit. erremus populi cinerumque tuorum,
Magne, metu nullas Nili calcemus arenas.
quod si tam sacro dignaris nomine saxum, adde
actus tantos monimentaque maxima rerum :
adde truces Lepidi motus Alpinaque bella
armaque Sertori revocato consule victa
et currus quos egit eques : commercia tuta
gentibus et pavidos Cilicas maris. adde subactam
barbariem gentesque vagas et quidquid in Euro
regnorum Eoreaque iacet, dic semper ab armis
civilem repetisse togam : ter curribus actis
contentum patriae multos donasse triumphos.

B.A. ORDINARY.

ROMAN HISTORY, LITERATURE, AND ANTIQUITIES.

Monday, 5th April, 1897 :—4 to 5 p.m.

1. Trace the growth of militarism in Roman History down to the reign of Tiberius.

2. The antecedents of Galba, Otho, Vitellius, and Vespasian before they became emperors.

[1] *Nyseia, "of Mt. Nysus."* [2] *Bromio, Bromius was the surname of Bacchus.* [3] *Lagi, "of Egypt."*

3. The origin and national character of Roman Satire, illustrated by reference to the chief Roman satirists.

4. Explain briefly the following terms: *Confarreatio, Pedarii Senatores, Patres Conscripti, Frumentariæ Leges, Quirites, Fiscus, Capite censi Iustitium Latifundia, Perduellio, Plebiscitum, Publicani, Novi homines, Ius Imaginum, Ius Honorum, Deminutio Capitis, Lustrum, Rogatio Maiestas.*

B.A. ORDINARY.

LATIN.

MONDAY, APRIL 5TH, 1897:—MORNING, 9 TO 12.

I. TACITUS, HISTORIES, BK. I.

1. Translate:—

(*a*) Adeoque parata apud malos seditio, etiam apud integros dissimulatio fuit, ut postero iduum die redeuntem a cena Othonem rapturi fuerint, ni incerta noctis et tota urbe sparsa militum castra nec facilem inter tomulentos consensum timuissent, non rei publicae cura, quam foedare principis sui sanguine sobrii parabant, sed ne per tenebras, ut quisque Pannonici vel Germanici exercitus militibus oblatus esset, ignorantibus plerisque, pro Othone destinaretur.

Explain clearly the uses of the subjunctives in this sentence.

(*b*) sed Otho tamquam peritia et monitu fatorum praedicta accipiebat, cupidine ingenii humani libentius obscura credendi. Nec deerat Ptolemaeus, iam et sceleris instinctor, ad quod facillime ab eiusmodi voto transitur. sed sceleris cogitatio incertum an repens: studia militum iam pridem spe successionis aut paratu facinoris adfectaverat, in itinere, in agmine, in stationibus vetustissimum quemque militum nomine vocans ac memoria Neroniani comitatus contubernales appellando: alios agnoscere, quosdam requirere et pecunia aut gratia iuvare, inserendo saepius querellas et ambiguos de Galba sermones, quaeque alia turbamenta volgi. labores itinerum, inopia commeatuum, duritia imperii atrocius accipiebantur, cum Campaniae lacus et Achaiae urbes classibus adire soliti Pyrenaeum et Alpes et inmensa viarum spatia aegre sub armis eniterentur.

(*c*) Plures quam centum viginti libellos praemium exposcentium ob aliquam notabilem illa die operam Vitellius postea invenit omnesque conquiri et interfecit iussit, non honori Galba, sed tradito principibus more, munimentum ad praesens, in posterum ultionem.

Interpret more fully the author's meaning. Explain the accusatives, *munimentum* and *ultionem*.

(*d*) Igitur laudata militum alacritate Vitellius ministeria principatus per libertos agi solita in equites Romanos disponit; vacationes centurionibus ex fisco numerat; saevitiam militum plerosque ad poenam exposcentium saepius adprobat, raro simulatione vinculorum frustratur.

Write brief notes on: ministeria principatus, vacationes, fiscus.

(*e*) Translate and comment on the following passages :—

(1) evolgato imperii arcano posse principem alibi quam Romae fieri.

(2) Sub Tiberio et Gaio et Claudio unius familiae quasi hereditas fuimus : loco libertatis erit quod eligi coepimus.

(3) Suscepere duo manipulares imperium populi Romani transferendum et transtulerunt.

(4) Sacris intentus fatigabat alieni iam imperii deos.

(5) Omnium consensu capax imperii nisi imperasset.

(6) longinquae provinciae et quicquid armorum mari dirimitur penes Othonem manebat, non partium studio, sed erat grande momentum in nomine urbis ac praetexto senatus et occupaverat animos prior auditus.

II. Juvenal, Selected Satires.

2. Translate :—

(*a*) Quid *Crassos*, quid *Pompeios* evertit ? et *illum*,
Ad sua qui domitos deduxit flagra Quirites ?
Summus nempe locus nulla non arte petitus.
Magnaque numinibus vota exaudita malignis.
Ad generum Cereris sine caede et vulnere pauci
Descendunt reges et sicca morte tyranni.

(b) Libera si dentur populo *suffragia*, quis tam
Perditus, ut dubitet *Senecam* praeferre Neroni ;
Cuius supplicio non debuit una parari
Simia, nec serpens unus, nec culeus unus ?
Par *Agamemnonidae* crimen ; sed causa fecit *rem*.
Dissimilem. Quippe ille *Deis auctoribus* ultor
Patris erat caesi *media inter pocula*.

Write explanatory notes on words and phrases printed in *italics*.

III. Horace, Select Satires and Epistles.

See questions 5 and 6, of the Third Year paper.

HONOURS IN CLASSICS.

B.A. ORDINARY.

Tacitus, *Dialogue*, and Quintilian, Book X.

Three Hours.

1. Discuss the question of the probable date when the Dialogue took place.

What reasons are there for assigning the authorship to Tacitus? Who else has been suggested as the author?

What do you know of the Mss. of this and the other works of Tacitus and their history till the 16th century?

2. State briefly who the following were, and what allusion is made to them in the Dialogue:—Nicetes Sacerdos, Lysias, Maecenas, Eprius Marcellus, L. Crassus, Cassius Severus, the Metelli, Appius Caecus.

3. State very briefly what views are advocated in the Dialogue by Curiatius Maternus.

4. Translate:—Nec refert quod inter se specie differunt, cum genere consentiant. Adstrictior Calvus, numerosior Asinius, splendidior Caesar, amarior Caelius, gravior Brutus, vehementior et plenior et valentior Cicero: omnes tamen eandem sanitatem eloquentiae prae se ferunt, ut, si omnium pariter libros in manum sumpseris, scias quamvis in diversis ingeniis esse quandam indicii ac voluntatis similitudinem et cognationem. Nam quod invicem se obtrectaverunt et sunt aliqua epistulis eorum inserta, ex quibus mutua malignitas detegitur, non est oratorum vitium sed hominum. Nam et Calvum et Asinium et ipsum Ciceronem credo solitos esse invidere et livere et ceteris humanae infirmitatis vitiis adfici;

solum inter hos arbitror Brutum non malignitate nec invidia sed simpliciter et ingenue indicium animi sui detexisse. An ille Ciceroni invidere, qui mihi videtur ne Caesari quidem invidisse?

5. In what sense are the following words used in the Dialogue :—auditorium, elumbis, incipit, odorari, scurrilitas, valetudinarium, quatenus, utrumne, sanguinans, locuples, dicacitas?

6. State and comment on Quintilian's estimate of Seneca, Plautus, Varius, Ovid, Hesiod, Lucretius, Valerius Flaccus, Lucan, Theophrastus, Demetrius Phalereus, Lysias, Xenophon, Herodotus, Clitarchus, Sallust, Callimachus, Persius, Domitius Afer.

7. What do you know of the life of Quintilian? What mention is made of him in Martial and Juvenal?

8. Translate :—Oratores vero vel praecipue Latinam eloquentiam parem facere Graecae possunt : nam Ciceronem cuicunque eorum fortiter opposuerim. Nec ignoro quantam mihi concitem pugnam, cum praesertim non id sit propositi ut eum Demostheni comparem hoc tempore ; neque enim attinet, cum Demosthenen in primis legendum vel ediscendum potius putem. Quorum ego virtutes plerasque arbitror similes, consilium, ordinem dividendi, praeparandi, probandi rationem, omnia denique quae sunt inventionis. In eloquendo est aliqua diversitas : densior ille hic copiosior, ille concludit adstrictius hic latius, pugnat ille acumine semper hic frequenter et pondere, illi nihil detrahi potest huic nihil adici, curae plus in illo in hoc naturae. Salibus certe et commiseratione, quae duo plurimum in adfectibus valent, vincimus. Et fortasse epilogos illi mos civitatis abstulerit, sed et nobis illa, quae Attici mirantur, diversa Latini sermonis ratio minus permiserit. In epistulis quidem, quamquam sunt utriusque, dialogisve, quibus nihil ille, nulla contentio est.

9. With what meanings unknown to the Republican period are the following words used in Quintilian :—classis, extemporalis, praesumo, prosa, versificator, circulatorius, ambitio, valetudo, venus? Name any other peculiarities in the vocabulary or syntax of Quintilian not to be found earlier

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B.A. HONOURS.

VIRGIL AND HORACE.

THREE HOURS.

1. Translate :—

(*a*) Nate, quis indomitas tantus dolor excitat iras?
quid furis? aut quonam nostri tibi cura recessit?
Non prius adspicies, ubi fessum aetate parentem
liqueris Anchisen? superet coniunxne Creüsa,

Ascaniusque puer? quos omnes undique Graiae
circum errant acies, et, ni mea cura resistat,
iam flammae tulerint, inimicus et hauserit ensis.
Non tibi Tyndaridis facies invisa Lacaenae,
culpatusve Paris; divum inclementia, divum,
has evertit opes, sternitque a culmine Troiam.
Adspice: namque omnem, quae nunc obducta tuenti
mortalis hebetat visus tibi, et humida circum
caligat, nubem eripiam; tu ne qua parentis
iussa time, neu praeceptis parere recusa.
Hic, ubi disiectas moles avulsaque saxis
saxa vides, mixtoque undantem pulvere fumum,
Neptunus muros magnoque emota tridenti
fundamenta quatit, totamque ab sedibus urbem
eruit; hic Iuno Scaeas saevissima portas
prima tenet, sociumque furens a navibus agmen,
ferro accincta, vocat.
Iam summas arces Tritonia, respice, Pallas
insedit, nimbo effulgens, et Gorgone saeva.

(*b*) Olli discurrere pares, atque agmina terni
diductis solvere choris, rursusque vocati
convertere vias, infestaque tela tulere.
Inde alios ineunt cursus aliosque recursus
adversis spatiis, alternisque orbibus orbes
impediunt, pugnaeque cient simulacra sub armis:
et nunc terga fuga nudant, nunc spicula vertunt
infensi, facta pariter nunc pace feruntur.
Ut quondam Creta fertur Labyrinthus in alta
parietibus textum caecis iter ancipitemque
mille viis habuisse dolum, qua signa sequendi
falleret indeprensus et irremeabilis error:
haud alio Teucrum nati vestigia cursu
impediunt, texuntque fugas et proelia ludo,
delphinum similes, qui per maria humida nando
Carpathium Libycumque secant, luduntque per undas.
Hunc morem, hos cursus, atque haec certamina primus
Ascanius, Longam muris quum cingeret Albam,
retulit, et priscos docuit celebrare Latinos,
quo puer ipse modo, secum quo Troïa pubes.
Albani docuere suos; hinc maxima porro
accepit Roma, et patrium servavit honorem,
Troiaque nunc, pueri Troianum dicitur agmen.

(*c*) i, pete unguentum, puer, et coronas
et cadum Marsi memorem duelli,

Spartacum si qua potuit vagantem
fallere testa.

dic et argutae properet Neaerae
murrheum nodo cohibere crinem ;
si per invisum mora ianitorem
fiet, abito.

lenit albescens animos capillus
litium et rixae cupidos protervae ;
non ego hoc ferrem calidus iuventa
consule Planco.

What is the metre of this ode? What is the date alluded to in the last line?

(*d*) gens, quae cremato fortis ab Ilio
iactata Tuscis aequoribus sacra
natosque maturosque patres
pertulit Ausonias ad urbes,

duris ut ilex tonsa bipennibus
nigrae feraci frondis in Algido,
per damna, per caedes, ab ipso
ducit opes animumque ferro.

non hydra secto corpore firmior
vinci dolentem crevit in Herculem,
monstrumve submisere Colchi
maius Echioniaeve Thebae.

merses profundo, pulchrior evenit ;
luctere, multa proruet integrum
cum laude victorem geretque
proelia coniugibus loquenda.

Karthagini iam non ego nuntios
mittam superbos : occidit, occidit
spes omnis et fortuna nostri
nominis Hasdrubale interempto :

What is the metre of this ode? Scan any one of the stanzas.

2. What various views have been taken of the following stanza?

Immunis aram si tetigit manus,
non sumptuosa blandior hostia
mollivit aversos Penates
farre pio et saliente mica.

Translate :—

Justum et tenacem propositi virum
non civium ardor prava jubentium
non vultus instantis tyranni
mente quatit solida,

3. Translate back into the words of Horace :—

(*a*) It is sweet to lay soberness aside at the right season.
(*b*) The mind I have to-day, why did I not also have it when a boy?
(*c*) I have completed a monument more durable than brass.
(*d*) It is sweet and comely to die for one's country.

B.A. HONOURS.

LATIN UNSEEN TRANSLATION.

Translate :—

(*a*) Haec propalam contionabundus in dies magis augebat iras hominum. Senatum vero incitare adversus legem haud desistebat : ne aliter descenderent in forum, cum dies ferendae legis venisset, quam ut qui meminissent sibi pro aris focisque et deum templis ac solo, in quo nati essent, dimicandum fore. nam quod ad se privatim attineat, si suae gloriae sibi inter dimicationem patriae meminisse sit fas, sibi amplum quoque esse urbem ab se captam frequentari, cotidie se frui monumento gloriae suae, et ante oculos habere urbem latam in triumpho suo, insistere omnes vestigiis laudum suarum. sed nefas ducere desertam ac relictam ab dis inmortalibus incoli urbem, et in captivo solo habitare populum Romanum, et victrice patria victam mutari. his adhortationibus principis concitati patres, senes iuvenesque, cum ferretur lex, agmine facto in forum venerunt, dissipatique per tribus suos quisque tribules prensantes orare cum lacrimis coepere, ne eam patriam, pro qua fortissime felicissimeque ipsi ac patres eorum dimicassent, desererent, Capitolium, aedem Vestae cetera circa templa deorum ostentantes ; ne exulem extorrem populum Romanum ab solo patrio ac diis penatibus in hostium urbem agerent, eoque rem adducerent, ut melius fuerit non capi Veios, ne Roma desereretur.

(*b*) At genitor sceleris comperto fine profundis
Erupit tenebris, saevoque in limine profert
Mortem imperfectam : veteri stat sordida tabo
Hirtaque canities, et durus sanguine crinis
Obnubit furiale caput ; procul ora genaeque
Intus et effossae squalent vestigia lucis.
Virgo autem impositae sustentat pondera laevae,
Dextra sedet baculo. Qualis si puppe relicta

Exosus Manes pigri sulcator Averni
Exeat ad Superos solemque et pallida turbet
Astra, nec ipse diu fortis patiensque superni
Aeris; interea longum cessante magistro
Crescat opus, totisque expectent saecula ripis:
Talis init campum, comitique extrema gementi
'Duc' ait, 'ad natos patremque recentibus, oro,
Inice funeribus!' Cunctatur nescia virgo,
Quid paret; impediunt iter implicitosque morantur
Arma, viri, currus, altaque in strage seniles
Deficiunt gressus et dux miseranda laborat.
Ut quaesita diu monstravit corpora clamor
Virginis, insternit totos frigentibus artus.
Nec vox ulla seni: iacet immugitque cruentis
Vulneribus, nec verba diu temptata sequuntur.
Dum tractat galeas atque ora latentia quaerit,
Tandem muta diu genitor suspiria solvit:
'Tarda meam, pietas, longo post tempore mentem
Percutis? estne sub hoc hominis elementia corde?
Vincis io miserum, vincis, natura, parentem.

B. CATULLUS.

1. Translate with notes:—

(*a*) Sed seu Sabine sine uerius Tiburs,
fui libenter in tua suburbana
uilla, malamque pectore expui tussim,
non immerenti quam mihi meus uenter
dum sumptuosas appeto dedit cenas.
Nam Sestianus dum uolo esse conuiua
orationem in Antium petitorem
plenam ueneni et pestilentiae legi.

(*b*) Simul haec comitibus Attis cecinit notha mulier,
thiasus repente linguis trepidantibus ululat,
leue tympanum remugit, caua cymbala recrepant,
uiridem citus adit Idam properante pede chorus.
Furibunda simul anhelans uaga uadit animam agens
comitata tympano Attis per opaca nemora dux,
ueluti iuuenca uitans onus indomita iugi:
rapidae ducem sequuntur Gallae properipedem.
Itaque, ut domum Cybelles tetigere lassulae,
nimio e labore somnum capiunt sine Cerere.
Piger his labante langore oculos soper operit:
abit in quiete molli rabidus furor animi.

(*c*) Hic, qualis flatu placidum mare matutino
horrificans Zephyrus procliuas incitat undas,
Aurora exoriente uagi sub limina Solis,
quae tarde primum clementi flamine pulsae
procedunt, leuiter resonant plangore cachinni,
post uento crescente magis magis increbescunt,
purpureaque procul nantes ab luce refulgent ;
Sic tum uestibuli linquentis regia tecta
at se quisque uago passim pede discedebant.

(*d*) Nam, quod scriptorum non magna est copia apud me,
hoc fit, quod Romae vivimus : illa domus,
illa mihi sedes, illic mea carpitur aetas :
huc una e multis capsula me sequitur.

2. Explain, with reference to context :—

(*a*) Amastri Pontica et Cytore buxifer.
(*b*) crede Pollioni fratri.
(*c*) odio Vatiniano.
(*d*) merus est Thyonianus.
(*e*) Lydiae lacus undae.
(*f*) Vrios apertos.
(*g*) Durrachium Adriae tabernam.
(*h*) Nicaeaeque ager uber aestuosae.
(*i*) fluctisono prospectans litore Diae.
(*k*) sancti incola Itoni.
(*l*) Progenies Thiae clara.
(*m*) carmen mittere Battiadae.

3. Comment on :—

(*a*) Manticae quod in tergo est.
(*b*) Amor sinistra ut ante dextram sternuit approbationem.
(*c*) Transfer omine cum bono
limen aureolos pedes
rasilemque subi forem.
(*d*) Sic uirgo dum intacta manet, dum cara suis est.
(*e*) lentos incuruans gurgite remos.
(*f*) At roseo niueae residebant uertice uittae.
(*g*) Totum illud formosa nego.
(*h*) lora rubra, membrana derecta plumbo atque pumice omnia aequata. (MSS. membranae.)

4. State what you know of the metres used by Catullus, and compare his usage with that of preceding and following writers.

B.A. HONOURS.

TERENCE, *Phormio*; PLAUTUS, *Captives*.

TUESDAY, APRIL 6TH, 1897:—MORNING, 9 TO 12.

1. Translate and comment on:

(*a*) AN. Adeon rem redisse, ut qui mihi consultum optumé velit esse,
Phaédria, patrem ut éxtimescam, ubi in méntem eius advent venit!
Quod ni fuissem incogitans, ita éxpectarem, ut par fuit.
PH. Quid istuc? AN. Rogitas? qui tam audacis facinoris mihi conscius sis?
Quod utinam ne Phormioni id suadere in mentem incidisset,
Neu me cupidum eo inpulisset, quod mihi principium est mali?
Non potitus éssem: fuisset tum illos mi aegre aliquot dies:
At non cotidiana cura haec angeret animum—PH. Audio.
AN. dum expécto quam mox vénia t qui hanc mihi adimat consuetudinem.

(*b*) PH. Itane patris ais adventum véritum hinc abiisse? GE. Admodum.
PH. Phanium relictam solam? GE. Sic. PH. Et iratum senem?
GE. Oppido. PH. Ad te summa solum, Phormio, rerum redit:
Tute hoc intristi: tibi omne est éxedendum: accingere.
GE. Obsecro te. PH. Si rogabit—GE. In te spes est. PH. Eccere!
Quid si reddet? GE. Tu inpulisti. PH. Sic, opinor. GE. Subveni.
PH. Cédo senem: iam instructa sunt mi in corde consilia omnia.
GE. Quid ages? PH. Quid vis, nisi uti maneat Phanium, atque ex crimine hoc
Antiphonem eripiam, atque in me omnem iram derivem senis?

(*c*) Quot rés! 'postilla monstra evenerunt mihi!
Introiit in aedis alienus canis:
Anguis per inpluvium décidit de tégulis:
Gallina cecinit: interdixit hariolus:
Haruspex vetuit ante brumam aliquid novi
Negoti incipere, quaé causa est iustissuma.'
Haec fient. AN. Vt modo fiant! GE. Fient mé vide.
Pater éxit: abi, dic ésse argentum Phaedriae.

2. Translate and explain words printed in italics:

(*a*) HEGIO. (ARISTOPHONTES.)

Quid ést suauius quam
Bene rém gerere *bono puplico*, sicut féci
Ego heri, quom emi hosce homines. ubi *quisque uident*
Eunt obuiam gratulanturque eam rem.
Ita me miserum restitando, retinéndo
Lassum reddidérunt:
Vix éx gratulando misér iam *eminébam*.
Tandem abii ad praetorem. ibi uix requieui,
Rogo syngraphum: datur mi *ilico*
Dedi Tyndaro: ille abiit domum:
Inde ilico reuortor
Domum, postquam id actumst.

(*b*) HE. Illést abductus récta in *phylacam*, ut dignus est.
Ego illis captiuis aliis documentum dabo,
Ne tale quisquam facinus incipere audeat.
Quod *apsque hoc esset*, qui mihi hoc fecit palam,
Vsque *offrenatum* suis me ductarént dolis.
Nunc cértumst nulli postbac quicquam crédere.
Satis sum semel decéptus: speraui miser
Ex séruitute me éxemisse filium.
Ea spés elapsast. pérdidi unum filium,
Puerum quadrimum quém mihi seruos *surpuit*,
Neque eum seruom umquam *repperi* neque filium:
Maior potitus hostiumst.

3. Explain the metre or metres of each extract printed above.

4. Translate and explain the following lines:—
(*a*) Maxima pars morem hunc homines habent.
(*b*) Genio suo ubi quando sacrificat.
(*c*) Eum si reddis mihi, praeterea unum nummum ne duis,
Et te et hunc amittam hinc.
(*d*) Facito ergo ut Acherunti clueas gloria.
(*e*) Purgem me? laterem lavem.
(*f*) Functus adulescentuli est officium liberalis.
(*g*) dicam tibi inpingam grandem.

5. Where is the scene of the Captives laid? of the Phormio? Give an outline of the plot of the Captives. Notice some of the points of difference between the Prosody of Plautus and that of the Augustan poets.

B.A. HONOURS.

PROPERTIUS AND CATULLUS.

THURSDAY, APRIL 8TH, 1896:—MORNING, 9 TO 12.

A. PROPERTIUS.

1. Translate and interpret:—

(*a*) Sed tempus lustrare aliis Helicona choreis,
Et campum Haemonio iam dare tempus equo.
Iam libet et fortes memorare ad proelia turmas
Et Romana mei dicere castra ducis
Quod si deficiant vires, audacia certe
Laus erit: in magnis et voluisse sat est.
Aetas prima canat Veneres, extrema tumultus.

(*b*) Quippe coronatos alienum ad limen amantes
Nocturnaeque canes ebria signa fugae,
Ut per te clausas sciat excantare puellas,
Qui volet austeros arte ferire viros.
Talia Calliope, lymphisque a fonte petitis
Ora Philetaea nostra rigavit aqua.

(*c*) Haud ullas portabis opes Acherontis ad undas:
Nudus ad infernas, stulte, vehere rates.
Victor cum victis pariter miscebitur umbras:
Consule cum Mario, capte Iugurtha sedes,
Lydus Dulichio non distat Croesus ab Iro;
Optima mors, parca quae venit apta die.

(*d*) Infelix Aquilo, raptae timor Orithyiae,
Quae spolia ex illo tanta fuere tibi?
Aut quidnam fracta gaudes, Neptune, carina?
Portabant sanctos alveus ille viros.
Paete, quid aetatem numeras? quid cara natanti
Mater in ore tibi est? non habet unda deos.
Nam tibi nocturnis ad saxa ligata procellis
Omnia detrito vincula fune cadunt

(*e*) Clausus ab umbroso qua alludit pontus Averno
Fumida Baiarum stagna tepentis aquae,
Qua iacet et Troiae tubicen Misenus arena
Et sonat Herculeo structa labore via,
Hic, ubi, mortalis dextra cum quaereret urbes,
Cymbala Thebano concrepuere deo,
At nunc invisae magno cum crimine Baiae,
Quis deus in vestra constitit hostis aqua?
His pressus Stygias vultum demisit in undas,
Errat et in vestro spiritus ille lacu.

(*f*) Testor maiorum cineres tibi, Roma, verendos,
Sub quorum titulis, Africa, tonsa iaces,
Et Persen proavi simulantem pectus Achillis
Quique tuas proavus fregit, Achille, domos,
Me neque censurae legem mollisse nec ulla
Labe mea vestros erubuisse focos.

2. Explain:—

(*a*) Mollia, Pegasides, date vestro serta poetae.
(*b*) Troia, bis Oetaei numine capta dei.
(*c*) O prima infelix fingenti terra Prometheo.
(*d*) Visus eram molli recubans Heliconis in umbra,
Bellerophontei qua fluit umor equi.

3 What do we know of the life and circumstances of Propertius? What notice does he take of the famous poets of his time? What is Quintilian's judgment of Propertius as a writer of Elegiac poetry?

B. A. HONOURS IN CLASSICS.

LATIN PROSE COMPOSITION.

TUESDAY, 13TH APRIL, 1897:—9 A. M. TO 12 NOON.

Translate into Latin:—

(*a*) A council of war was now called. It was evident that the forces of the Spaniards were unequal to a contest with so numerous and well-appointed a body of natives; and, even if they should prevail here, they could have no hope of stemming the torrent which must rise against them in their progress—for the country was becoming more and more thickly settled, and towns and hamlets started into view at every new headland which they doubled. It was better in the opinion of some—the faint-hearted—to abandon the enterprise at once, as beyond their strength. But Almagro took a different view of the affair. "To go home," he said, "with nothing done, would be ruin as well as disgrace. There was scarcely one but had left creditors behind, who looked for payment to the fruits of this expedition. To go home now would be to deliver themselves at once into their hands. It would be to go to prison. Better to roam a free man, though in the wilderness, than to lie bound with fetters in a dungeon."

BURKE TO FRANCIS.

(*b*) You are the only friend I have who will dare to give me advice; I must, therefore, have something terrible in me, which intimidates all others who know me from giving me the only unequivocal mark of their regard. Whatever this rough and menacing manner may be, I must search myself

upon it; and when I discover it, old as I am, I must endeavour to correct it. I flattered myself, however, that you at least would not have thought my other friends justified in withholding from me their services of this kind. You certainly do not always convey to me your opinions with the greatest tenderness and management; and yet I do not recollect, since I first had the pleasure of your acquaintance, that there has been a heat or a coolness of a single day's duration, on my side, during that whole time. I believe your memory cannot present to you an instance of it. I ill deserve friends, if I throw them away on account of the candour and simplicity of their good nature.

B.A. HONOURS EXAMINATION.

TACITUS, *Annals*, Books XIV.-XVI.

THURSDAY, 15TH APRIL.

(*Three Hours*)

1. Translate:—

(*a*) Libet argumenta conquirere in eo quod sapientioribus deliberatum est? sed et si nunc primum statuendum haberemus, creditisne servum interficiendi domini animum sumpsisse, ut non vox minax exciderct, nihil per temeritatem proloqueretur? sane consilium occultavit, telum inter ignaros paravit: num excubias transire, cubiculi fores recludere, lumen inferre, caedem patrare *poterat* omnibus nesciis? multa sceleris indicia praeveniunt: servi si prodant, possumus singuli inter plures, tuti inter anxios, postremo, si pereundum sit, non inulti inter nocentes agere. suspecta maioribus nostris fuerunt ingenia servorum, etiam cum in agris aut domibus isdem nascerentur caritatemque dominorum statim acciperent. postquam vero nationes in familiis habemus, quibus diversi ritus, externa sacra aut nulla sunt, conluviem istam non nisi metu coercueris. at quidam insontes peribunt. nam et ex fuso exercitu cum decumus quisque fusti feritur, etiam strenui sortiuntur. habet aliquid ex iniquo omne magnum exemplum, quod contra singulos utilitate publica rependitur.

(*b*) At Suetonius mira constantia medios inter hostes Londinium perrexit, cognomento quidem coloniae non insigne, sed copia negotiatorum et commeatuum maxime celebre. ibi ambiguus an illam sedem bello deligeret, circumspecta infrequentia militis, satisque magnis documentis temeritatem Petilii coercitam, unius oppidi damno servare universa statuit. neque fletu et lacrimis auxilium eius orantium flexus est quin daret profectionis signum et comitantes in partem agminis acciperet: si quos inbecillus sexus aut fessa aetas vel loci dulcedo attinuerat, ab hoste oppressi sunt. eadem clades municipio Verulamio fuit, quia barbari omissis castellis praesidiisque militarium, quod uberrimum spolianti et defendentibus intutum,

laeti praeda et laborum segnes petebant. ad septuaginta milia civium et sociorum iis quae memoravi locis cecidisse constitit. neque enim capere aut venundare aliudve quod belli commercium, sed caedes patibula ignes cruces, tamquam reddituri supplicium ac praerepta interim ultione, festinabant.

(c) Impetu pervagatum incendium plana primum, deinde in edita adsurgens et rursus inferiora populando, anteiit remedia velocitate mali et obnoxia urbe artis itineribus hucque et illuc flexis atque enormibus vicis, qualis vetus Roma fuit. ad hoc lamenta paventium feminarum, fessa aetate aut rudis pueritiae [aetas], quique sibi quique aliis consulebant, dum trahunt invalidos aut opperiuntur, pars mora, pars festinans, cuncta impediebant. et saepe, dum in tergum respectant, lateribus aut fronte circumveniebantur, vel si in proxima evaserant, illis quoque igni correptis, etiam quae longinqua crediderant in eodem casu reperiebant, postremo, quid vitarent quid peterent ambigui, complere vias, sterni per agros; quidam amissis omnibus fortunis, diurni quoque victus, alii caritate suorum, quos eripere nequiverant, quamvis patente effugio interiere. nec quisquam defendere audebat, crebris multorum minis restinguere prohibentium, et quia alii palam faces iaciebant atque esse sibi auctorem vociferabantur, sive ut raptus licentius exercerent seu iussu.

2. Translate and comment on :—

(a) Quanto suo labore perpetratum ne inrumperet curiam, ne gentibus externis responsa daret!

(b) Vetus illi cupido erat curriculo quadrigarum insistere, nec minus oedum studium cithara ludicrum in modum canere.

(c) Ad hoc templum divo Claudio constitutum quasi arx aeternae dominationis aspiciebatur, delectique sacerdotes specie religionis omnis fortunas effundebant.

(d) Sed uterque mensuram inplevimus, et *tu*, quantum princeps tribuere amico posset, et ego, quantum amicus a principe accipere: cetera invidiam augent.

(e) Haec atque talia plebi volentia fuere, voluptatum cupidine et, quae praecipua cura est, rei frumentariae angustias, si abesset, metuenti.

(f) Equitum Romanorum locos sedilibus plebis anteposuit apud circum; namque ad eam diem indiscreti inibant, quia lex Roscia nihil nisi de quattuordecim ordinibus sanxit.

(g) Et novissimo quoque momento suppeditante eloquentia advocatis scriptoribus pleraque tradidit, quae in vulgus edita eius verbis invertere supersedeo.

3. Write a brief note on each of the following :—*Occidat dum imperet; Quinquennium Neronis; supplicationes; Cincia rogatio; pedibus in sententiam ire; elegantiae arbiter; ille scenicus.*

4. State briefly what you know of Verginius Rufus, Domitius Afer, Annaeus Lucanus, Thrasea Paetus, Rubellius Plautus, Sophonius Tigellinus, Barea Soranus.

5. Write a short estimate of the career and character of Seneca.

6. Briefly discuss the claim of Tacitus to rank as one of the great representative writers of antiquity.

GENERAL PAPER.

FOURTH YEAR HONOURS.

SATURDAY, APRIL 24TH :—MORNING.

1. The characteristics of Plautus and Propertius.

2. State the general characteristics of the Roman National Drama, and give a brief sketch of its chief writers.

Define the terms *fabula togata*, *fabula praetexta*, *fabula palliata*.

3. Sketch the life and learning of Terentius Varro, and a list of his most important works.

4. Write brief notes on—Aulus Gellius, Priscianus, Marcus Aurelius, Pliny the Elder, A Persius Flaccus, Petronius Arbiter.

5. What influences were favorable and what unfavorable to literature in the Silver Age? Who were the chief tragic poets of this age? Characterise one of them.

6. What do you know of the nature of Latin Futures, such as (*a*) reget, (*b*) monebit? Quote parallels to the former from Greek and to the latter from other languages.

7. The treatment of the velars and palatals in Latin compared with that in Greek, *or* Gothic, *or* Sanskrit.

8. What survivals are there in Latin of the following:—

Genitive of ā-stems, Dative of ā-stems, Dual Number, Gradation (Ablaut) in the decl. of the same stem, Gradation (Ablaut) in the conjugation of the same tense, an Aorist tense. On what ground do you explain such difference as "rūdens" (Plautus) and rudens (Virgil).

9. With what words in other Indo-Germanic languages would you connect the following *au*fero, con*do*, barba (what would you expect?), bos (why not *vos*?), popina (why not coquina?), sequor, of*fendi*mentum, tondeo; explain why hīc, hŏc, ēs are scanned as long syllables in Plautus, and why the two forms deorum and deum are both found for the Gen. Plural. What traces are there in Latin of an Abl. in —— d, and what other language affords a parallel?

10. The moral and political attitude of Stoicism under the Empire.

11. Give some account of the part played by the Claudian *gens* in Roman history.

12. Sketch the growth of the popular party in the last century of the Republic.

MATHEMATICS AND NATURAL PHILOSOPHY.

SESSIONAL EXAMINATIONS, 1897.

FIRST YEAR.

GEOMETRY—ARITHMETIC.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner, ... A. JOHNSON, M.A., LL.D.
Assistant Examiner, ... H. M. TORY, M.A.

(*Write the answers in separate books marked A and B respectively to correspond to the questions*).

A.

1. In any triangle the square on the side subtending an acute angle is less than the sum of the squares of the sides containing that angle by twice the rectangle contained by either of these sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

(*a*) In any triangle the sum of the squares on two sides is equal to twice the square on half the base together with twice the square of the line joining the vertex to the middle point of the base.

2. Circumscribe a circle about a given triangle.

(*a*) Triangles which have equal bases and equal vertical angles have equal circumscribed circles.

3. Cut a given line in a given ratio.

4. Parallelograms which are equal in area and which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

5. Find the interest on $3,106 for 301 days at 5½ per cent. per annum.

6. Reduce the circulating decimal $21.3535\dot{5}$ to a vulgar fraction.

B.

7. The straight line joining the centre of a circle to the point of contact of a tangent is perpendicular to the tangent.

(*a*) The centre of any circle which touches two intersecting straight lines must lie on the bisector of the angle between them.

8. If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base must have the same ratio which the sides of the triangle have to one another.

9. Find a mean proportional between two given straight lines.

a. Show that the mean proportional is never greater than half the sum of the given lines.

10. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

11. The side of a square is 22 perches 1 yard 2 ft. long, find to the nearest foot the length of its diagonal.

12. Find a fourth proportional to 3.14159 : 2.68 :: $1\frac{3}{4}$.

FIRST YEAR.

TRIGONOMETRY—ALGEBRA.

MONDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, M.A., LL.D.
Assistant Examiner,..... H. M. TORY, M.A.

(*Write the answers in separate books marked* A *and* B *respectively to correspond to the questions*).

A.

1. Taking a line of any convenient length for the unit length, construct the angles A, B and C where

$$\tan A = \tfrac{3}{8} : \sin B = \tfrac{1}{5} : \operatorname{cosec} C = 3$$

2. Trace the changes of sign in $\sin A$ as A increases from 0° to 360°.

3. Investigate a formula for converting an angle given in radians into degrees, minutes and seconds.

4. Three times the greater of two numbers exceeds twice the less by 27; and the sum of twice the greater and five times the less is 94: find them.

5. Show that $\sqrt{20}$, $\sqrt{45}$ and $\sqrt{\frac{1}{5}}$ are similar surds.

6. Show that $a^{m} = 1 : a^{-m} = \frac{1}{a^{m}}$

B.

7. Prove (1) $\sin (A - B) = \sin A \cos B - \cos A \sin B$

(2) $\cos (A - B) = \cos A \cos B + \sin A \sin B$

and find value of $\sin (A + B$ if $\sin A = \frac{3}{5}$ and $\sin B = \frac{1}{2}$

8. Prove that in any triangle

$$(1) \quad \frac{a+b}{c} = \frac{\cos \frac{1}{2}(A - B)}{\cos \frac{1}{2}(A + B)}$$

$$(2) \quad \cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

9. Express all the trigonometrical ratios in terms of the sine.

10. Solve the following equations :

$$(1) \quad 3x + 2\sqrt{x} - 1 = 0$$

$$(2) \quad \frac{x+3}{x+2} + \frac{x-3}{x-2} = \frac{2x-3}{x-1}$$

$$(3) \quad x - y = 2 \quad x^3 - y^3 = 98$$

11. Simplify $\left(\frac{2}{x} - \frac{1}{a+x} + \frac{1}{a-x}\right) \div \left(\frac{a+x}{a-x} - \frac{a-x}{a+x}\right)$

12. A person swimming in a stream which runs $1\frac{1}{2}$ miles an hour, finds that it takes him four times as long to swim a mile up the stream as it does to swim the same distance down ; at what rate does he swim.

INTERMEDIATE EXAMINATION.

GEOMETRY.—ARITHMETIC.

FRIDAY, APRIL 9TH, 1897 :—MORNING, 9 TO 12.

Examiners, ALEX. JOHNSON, M.A., LL.D.; JOHN COX, M.A.; H. WALTERS, B.A.

Assistant Examiner, H. M. TORY, M.A.

(Write the answers in separate books marked A, B, C, respectively, to correspond to the questions.

A.

1. As an example under a proposition in the 6th Book, construct a regular pentagon which shall have a given area.

2. Equiangular triangles are similar to one another, and have those sides homologous which are opposite the equal angles.

(*a*) Three straight lines intersect in the same point. Prove that any two parallel straight lines drawn across them are cut in the same ratio.

3. Two triangles have two sides of the one respectively equal to two sides of the other, and the included angles are *supplemental*, prove that their areas are equal.

4. Find the side of a square inscribed in a circle whose circumference is 132 inches.

B.

5. Find a third proportional to two given straight lines.

6. Prove that the rectangle under the two extreme terms of three proportionals is equal to the square on the mean.

7. Inscribe a regular quindecagon in a given circle.

8. Find the diagonal of a square whose area is 44 square yards.

C.

9. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.

(*a*) State and prove the converse proposition.

10. Describe an isosceles triangle having each of the angles at the base double of the vertical angle.

11. Similar triangles are to one another in the duplicate ratio of their homologous sides.

12. If a kilometre $= \frac{5}{8}$ of a mile, how many turns will a wheel take in 20 miles, the circumference of the wheel being 4 metres 5 millimetres?

INTERMEDIATE EXAMINATION, 1897.

TRIGONOMETRY—ALGEBRA.

MONDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiners, ... { ALEX. JOHNSON, M.A., LL.D. / JOHN COX, M.A. / H. WALTERS, B.A.

Assistant Examiner, ... H. M. TORY, B.A.

(Write the answers in separate books marked A, B and C respectively to correspond to the questions).

A.

1. (*a*) Given $\sin A = \frac{2n}{n^2+1}$ and $\sin B = \frac{2p}{p^2+1}$, find $\tan (A + B)$.

(*b*) Show that

$$\frac{1 - \sin A \cos A}{\cos A (\sec A - \operatorname{cosec} A)} \times \frac{\sin^2 A - \cos^2 A}{\sin^3 A + \cos^3 A} = \sin A.$$

2. In any triangle given $A = 135°$, $B = 15°$ and the side $c = 19$ feet, find the side b.

3. The quantity of paper required for a book of 540 pages of a certain size will only serve for 400 pages if the margin round each page is half an inch wider; the larger page exceeds the smaller by 14 square inches. Find the length and breadth of a small page.

4. Find approximately in how many years a sum of money will double itself at 6 per cent. compound interest, the interest being payable yearly.

B.

5. Prove the following relations :—

(*a*) $\frac{1 - \cos A}{1 + \cos A} = \tan^2 \frac{A}{2}$

(*b*) $\cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{b c}}$, when $s = \frac{a+b+c}{2}$

6. A and B are two points 100 feet apart, and C is a point equally distant from A and B. What must be the distance of C from A and B if angle $A C B = 120°$.

7. Solve the following equations:

(1) $x - y = 2$; $x\,y = 15$.

(2) $\dfrac{3}{4-2x} + \dfrac{30}{8(1-x)} = \dfrac{3}{2-x} + \dfrac{5}{2-2x}$

(3) $y + z = 2a$, $z + x = 2b$ $x + y = 2c$.

8. Prove that

(1) $3\sqrt{8} + 2\sqrt[3]{6} + 3\sqrt[4]{54} = 216\,\sqrt[12]{6}$

(2) $\dfrac{\sqrt{3}+1}{\sqrt{3}-1} = 2 + \sqrt{3}$

C.

9. Prove the following relations:

(*a*) $\text{Cos}\,(A + B) = \cos A \cos B - \sin A \sin B$.

(*b*) $\text{Sin}\,A + \sin B = 2 \sin \dfrac{A+B}{2} \cos \dfrac{A-B}{2}$.

(*c*) $\text{Sin}\,\theta = 2 \sin \dfrac{\theta}{2} \cos \dfrac{\theta}{2}$.

10. $A\,B\,C$ is a triangle, having $A\,C$ and $B\,C$ equal respectively to 300 yds. and 400 yds. and the angle at $C = 58°\ 20'\ 30''$; calculate $A\,B$.

11. Solve the following equations:

(*a*) $\sqrt{x} - \sqrt{a+x} = \sqrt{\dfrac{a}{x}}$.

(*b*)
$$\left.\begin{array}{l} x\,y = x + y \\ x\,z = 2\,(x + z) \\ y\,z = 3\,(y + z) \end{array}\right\}$$

(*c*)
$$\left.\begin{array}{l} x^3 + y^3 = 189 \\ x^2 y + x\,y^2 = 180 \end{array}\right\}$$

12. By selling a cow for \$24 I lose as much per cent. as it cost me. What was its prime cost?

SESSIONAL EXAMINATIONS, 1897.

THIRD YEAR.

MECHANICS—HYDROSTATICS.

FRIDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiners, ... { ALEX. JOHNSON, M.A., LL.D.
JOHN COX, M.A.

(*Write the answers in separate books marked* A. *and* B. *respectively to correspond to the questions.*)

A.

1. A body whose weight is W pounds is held at rest on a smooth inclined plane whose angle of inclination is i by a string which is parallel to the length of the plane, find the pull on the string.

(*a*) If the distance of the body from the foot of the plane be d feet, and the string be cut, find the velocity of the body on arriving at the foot of the plane.

2. Find the resultant of two parallel forces acting in the same direction.

3. A circle is placed in a vertical plane, show that the time of descent of a heavy particle from the top of the vertical diameter to the lowest point of any chord is constant.

4. The specific gravity of pure gold is 19.3 and of copper 8.9, find the specific gravity of standard gold which is a mixture of 11 parts by weight of gold and one of copper, proving any formula you employ.

5. Describe the construction of the mercurial barometer, and explain its action.

(*a*) If a piece of iron float in the mercury contained in the tube, will it have any effect on the indications of the instrument? Explain.

6. A piece of cork (*sp. gr.* = ·24) containing 2 cubic feet is kept below water by a string fastened to the bottom of the vessel, find the tension of the string.

B.

7. A boat is forty feet long and weighs 120 lbs. The four rowers and the coxswain sit five feet apart from each other symmetrically between the ends of the boat. Their weights in order are 144, 160, 168, 154 and 130 lbs. Find (*a*) the centre of gravity of boat and men, (*b*) the volume of water they displace.

8. The two equal weights in an Atwood's machine are each 8 oz. What must the small rider be in order that after 3 seconds the weights shall have moved through 16 feet?

9. Find the time of flight and range of a particle projected at 30° elevation with velocity 1,600 feet per second.

10. A stone, weighing 2 cwt, falling from a tower 100 feet high embeds itself one inch in the earth. What was the average pressure exerted by it while coming to rest?

11. If a cubic foot of air at 0° C and 760 mm. pressure weighs 1.293 oz., find the weight of a cubic foot of air at 100° C and 570 mm. pressure.

12. A diving bell is sunk till its lowest point is 68 feet below the surface. If the water barometer is at 34 feet, and the bell is full of air, what fraction of the air will escape from it as it is drawn up to the surface?

SESSIONAL EXAMINATIONS, 1897.

THIRD YEAR.

ASTRONOMY—OPTICS.

MONDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiners..... ..... { ALEXANDER, JOHNSON, M. A., LL.D.
JOHN COX, M.A.

(*Write the answers in separate books marked A and B respectively, to correspond to the questions.*)

A.

1. Give a physical explanation of the fact that the Earth bulges out at the equator.

2. Explain clearly the cause of an eclipse of the moon, illustrating by a diagram.

3. Give an account of Foucault's experiment to show the rotation of the Earth.

4. State the laws of refraction of light, and describe the experimental proof.

5. Define the *centre* of a lens and find it.

6. Describe the eye as an optical instrument.

B.

7. Prove the formula

$$\frac{1}{d} + \frac{1}{D} = \frac{1}{f}$$

for a concave spherical mirror.

With a concave mirror of radius 5 inches, where must an object be placed so that the magnification may be 3?

8. Prove that the deviation of a ray incident nearly perpendicularly on a prism of small angle i and index u is $(\mu - 1)\, i$.

Find the *dispersion* produced by a prism of rocksalt of 6° angle, whose index of refraction is 1.557 and dispersive power .053.

9. An object viewed through a double convex lens held one inch away from it appears to be at a distance of 10 inches. What is the focal length of the lens?

If its index of refraction is 1.642, find the radius of the two equally curved surfaces.

10. Explain the principle of the sextant, and prove its truth.

The greatest altitude of the Sun on March 21st is observed to be 44° 29′ 38″. What is the latitude of the place?

11. Explain clearly why the fact that Nansen's watch ran down made it impossible to be sure of his place afterwards. He afterwards found that they had set going again 26 minutes wrong. What difference did this make in his estimate of his longitude?

12. It is 20 days after new moon. About when will she rise, and set? What is her shape? Mark the eastern limb?

B.A. ORDINARY EXAMINATION, 1897.

ASTRONOMY—OPTICS.

MONDAY, APRIL 12TH, 1897 :—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, M.A., LL.D.
JOHN COX, M.A.

(Write the answers in separate books marked A and B respectively, to correspond to the questions.)

A.

1. What is meant by the *precession of the equinoxes*. What is the connection between it and the pole-star? Explain the physical cause of it.

(*a*) The longitude of Sirius on the 1st January, 1856, was 99°; what was its longitude at the commencement of the Christian era, allowing 50″.24 for the mean amount of precession.

2. Define *parallax*, and *horizontal parallax*. Investigate formulae for determining them.

3. Describe one method of finding the longitude of a place on the earth's surface.

4. Describe the Astronomical Telescope and find its magnifying power.

5. An object 1 inch in diameter is placed at a distance of 15 inches from a convex lens of 12 inches focal length, find the distance and magnitude of the image.

6. Explain total reflexion, and find the angle of total reflexion for water whose index of refraction is 1.336.

B.

7. Prove the formula for a lens

$$\frac{1}{d} - \frac{1}{D} = (\mu - 1)\left(\frac{1}{r} - \frac{1}{r}\right)$$

Design a convex lens of crown glass (μ=1.5) to have a focal length of 20 feet and the radius of one surface $2\frac{1}{2}$ times that of the other.

8. Describe the compound microscope. The objective of a microscope has a focal length of $\frac{1}{4}$ inch, and the first image is formed 10 inches behind it. How near is it placed to the object, and what is the magnification?

9. A person's distance of distinct vision is $5\frac{1}{4}$ inches. What should be the focal length of his spectacles for reading?

10. Describe and explain the phenomena of day and night as observed at place within the Arctic circle at different times of the year.

11. How is the latitude found daily when navigating at sea?

12. Describe any methods you know for determining the distance of the Sun.

B. A. ORDINARY.

MECHANICS AND HYDROSTATICS.

FRIDAY, APRIL 9TH :—MORNING, 9 TO 12 A.M.

Examiners, ALEXANDER JOHNSON, LL.D. JOHN COX, M.A.

(Not more than *ten* questions to be answered.)

1. Find the resultant of two parallel forces acting in the same direction.

In a balance with unequal arms an object appears to weigh 16 lbs; when the object and weights are interchanged it appears to weigh 14 lbs 1oz.: find the ratio of the arms and true weight.

2. Define the centre of gravity of a body, and find that of a plane triangle.

Weights of 1, 2, 3, 4, 5 lbs. are placed in a row at distances 4, 3, 2, 1 feet from each other respectively. Find their centre of gravity.

3. Explain the principle of work, and find by its aid, or otherwise, the ratio of the power to the weight in the system of pulleys in which each pulley hangs by a separate string.

If there are 3 moveable pulleys, each weighing 2 lbs., what force is required to support a weight of 112 lbs?

4. Prove the formula $s=\frac{ft^2}{2}$ for uniformly accelerated motion.

A stone is thrown vertically upwards with velocity 60 feet per second. At what time and with what velocity will it strike a ceiling 30 feet high?

5. A weight of 6 lbs. rests on a horizontal table and is attached by a string to a weight of 2 lbs. hanging over the edge. The weight is dragged off the table in $1\frac{1}{4}$ seconds. How far was it from the edge of the table?

6. A bullet weighing $\frac{1}{8}$ ounce is fired into a block of wood held in place by a spring capable of resisting a force of 200 lbs. weight. The block yields 3 inches under the blow. What was the speed of the bullet?

7. A stone is projected with velocity 80 feet per second at an angle of 30° to the horizon. Find the range and time of flight.

8. A ball of mass 4 ounces going 3 feet per second overtakes another of mass 3 ounces going in the same direction 2 feet per second. Find the velocity of each after impact, if the coefficient of elasticity is $\frac{1}{2}$.

9. Prove that a body describing a circle radius r, with uniform velocity v is under an acceleration to the centre $\frac{v^2}{r}$.

A bicycle rider rides at 12 miles an hour round a circular track, radius 100 yards. Find the slope of his wheel to the vertical ($g=32$).

10. If the seconds pendulum is 39.139 inches long, calculate the value of gravity.

11. A substance weighs 34 grams in air, and if held under water by a string fastened to the bottom, causes a tension of 16 grams in the string. Find its Specific Gravity.

12. A diving bell of 170 cubic feet capacity on being lowered to a depth of 60 feet in water requires 300 cubic feet of air (at atmospheric pressure) to be pumped into it in order to keep it just full of air. Find the height of the water barometer.

13. A mixture of equal parts by weight of two substances has a Sp G.

of 9.6. Equal parts by volume give a Sp. G. of 10. Find the Sp. Gs. of the substances

14. If 180 cubic fact of gas at pressure 29 inches, and temperature 60° F, are raised to 212 F°, and compressed to 84 feet, find the new pressure.

HONOUR EXAMINATIONS IN MATHEMATICS.

FIRST YEAR.

GEOMETRY (*First Paper*).

WEDNESDAY, APRIL 21ST, 1897:—MORNING, 9 TO 12.

Examiners,..... { G. H. CHANDLER, M.A. / H. M. TORY, M.A.

A.

1. Given the three bisectors of the sides of a triangle; construct it.

2. The bisectors of the internal and external vertical angles of a triangle, produced, meet the circumscribed circle in the middle point of the arcs of the segments into which the base divides the circle; the line joining these points is the diameter which bisects the base at right angles; and if perpendiculars be let fall from these two points on the two sides, the distances from the feet of these perpendiculars to the vertices of the triangle are either half the sum or half the difference of the two sides.

3. If a quadrilateral be inscribed in a circle and the figure completed, the square on the third diagonal is equal to the sum of the squares on the two tangents from its extremities.

4. Draw a common tangent to two circles.

5. If any point on the circumference of a circle be joined to the three angles of an inscribed equilateral triangle, the straight line drawn to the remote angle is equal to the sum of the other two.

6. In a given circle inscribe a triangle whose sides shall pass through three given points.

B.

7. The sum of the squares on the sides of any quadrilateral is equal to the sum of the squares on the two diagonals, together with four times the square on the line joining the middle points of the diagonals.

8. To inscribe a square in any triangle, and to prove that the rectangle under its side and the sum of the base and the altitude of the triangle, is equal to twice the triangle.

9. The rectangle under the sides of a triangle together with the square of the bisector of the external vertical angle is equal to the rectangle under the segments into which the bisector of the external vertical angle divides the base.

10. If perpendiculars be drawn from any point on the circumference of a circle to the sides of an inscribed triangle, three feet are in the same straight line.

11. Describe a circle, passing through a given point, and touching two given straight lines.

12. Given the vertical angle of a triangle in magnitude and positions and the sum of the reciprocals of the sides; prove that the base always passes through a fixed point on the bisector of the vertical angle.

HONOUR EXAMINATIONS, 1897.

FIRST YEAR.

GEOMETRY (*Second Paper*).

WEDNESDAY, APRIL 21st, 1897:—AFTERNOON, 2 to 5.

Examiners, ... { G. H. CHANDLER, M.A. / H. M. TORY, M.A.

A.

1. If any transversal cut a pencil of four rays, the ratio of the rectangle under the whole transversal and its middle segment to the rectangle under the extreme segments is constant.

2. Each of the diagonals of a complete quadrilateral is cut harmonically by the other two.

3. Given six points on the circumference of a circle; find a seventh point on the circumference, such that the anharmonic ratio of it and three of the points taken in an assigned order, shall be equal to the anharmonic ratio of it and the other three points taken in an assigned order.

4. If through any point a straight line be drawn cutting a circle and the polar of the point; the line will be cut harmonically by the circle, the polar and the point.

5. Given a triangle, to describe the circle with respect to which the triangle is self-conjugate.

6. The polar of a given point, with respect to any circle of a co-axal system, will always pass through a fixed point.

B.

7. If any transversal cut the sides of a triangle, the segments of any side are in a ratio compounded of the ratios of the segments of the other two sides.

8. Two vertices of a triangle move on fixed straight lines, and the three sides pass through three fixed points, which lie on a straight line, find the locus of the third vertex.

9. Prove that a secant from the intersection of two tangents to a circle is cut harmonically by the circumference and the chord of contact.

10. Given the base and the difference of the sides of a triangle; the polar of the vertex with respect to one extremity of the base as origin always touches a fixed circle.

11. Describe a triangle which shall have its vertices on three given straight lines, and its sides tangents to a given circle.

12. Describe a circle touching three given circles.

HONOUR EXAMINATIONS, 1897.

THEORY OF EQUATIONS—ALGEBRA.

FRIDAY, APRIL 23RD :—MORNING, 9 TO 12.

Examiners, ... { G. H. CHANDLER, M.A. / H. M. TORY, M.A.

A.

1. If an equation $f(x) = 0$, whose roots are all real quantities, have for a root the imaginary expression $a + b\sqrt{-1}$, it must also have for a root the expression $a - b\sqrt{-1}$.

2. Solve the equation $x^4 + 4x^3 - 2x^2 - 12x + 9 = 0$, given that it has two pairs of equal roots.

3. If in any equation each negative co-efficient be taken positively, and divided by the sum of all the positive co-efficients which precede it, the greatest quotient thus formed increased by unity is a superior limit of the positive roots.

4. Given that the positive root of the equation $4x^3 - 13x^2 - 31x - 27 = 0$, lies between 6 and 7, find it.

5. Resolve $\dfrac{42 - 19x}{(x^2 + 1)(x - 4)}$ into partial fractions.

6 Prove that $a^x = 1 + x \log_e a + x^2 \frac{(\log_e a)^2}{1.2} + \frac{x^3 (\log_e a)^3}{1.2.3}$ etc.

B.

7. Every equation of an odd degree has at least one real root of a sign opposite to that of its last term. Every equation of an even degree, whose last term is negative, has at least two real roots, one positive, the other negative.

8. Solve the equation

(1) $x^3 + qx + r = 0$,

(2) $x^5 + x^4 + x^3 + x^2 + x + 1 = 0$.

9. Transform the equation

$x^4 - 4x^3 - 18x^2 - 3x + 2 = 0$ into one which shall want the third term.

10. State Sturm's theorem :—

Apply it to find the number and situation of the real roots of the equation

$$x^3 - 2x - 5 = 0.$$

11. If four times the number of permutations of n things 3 together is equal to five times the number of permutations of $n - 1$ things 3 together, find n.

12. Find the sum of the series

$1.2 + 2.3 + 3.4 + 4.5 + + n(n + 1)$ by means of the principle of undetermined co-efficients.

HONOUR EXAMINATIONS, 1897.

SECOND YEAR.

PLANE AND SPHERICAL TRIGONOMETRY.

FRIDAY, APRIL 23RD :—AFTERNOON, 2 TO 5.

Examiner.....ALEXANDER JOHNSON, M.A., LL.D.

1. Prove

$$\cos m\theta = \cos^m \theta - \frac{m(m-1)}{1.2} \cos^{m-2} \theta \sin^2 \theta + \text{etc.}$$

How many terms will there be in the series?

2. Prove

$$2^m \cos^m \theta = 2 \cos m\theta + 2m \cos (m-2)\theta + 2 \frac{m(m-1)}{1.2} \cos (m-4)\theta + \text{etc.}$$

3. Prove $\tan a = \frac{1}{\sqrt{-1}} \left\{ \frac{e^{2a\sqrt{-1}} - 1}{e^{2a\sqrt{-1}} + 1} \right\}$

4. If $A + B + C = 180°$ prove

$$\cos A + \cos B + \cos C = 1 + 4 \sin \tfrac{1}{2} A \sin \tfrac{1}{2} B \sin \tfrac{1}{2} C.$$

5. In any triangle prove $\frac{a-b}{c} = \frac{\tan \frac{1}{2} A - \tan \frac{1}{2} B}{\tan \frac{1}{2} A + \tan \frac{1}{2} B}$.

6. Prove that any two sides of a spherical triangle are greater than the third.

7. In a spherical triangle prove

$$\cos A = \frac{\cos a - \cos b \cos c}{\sin b \sin c}$$

And find the theorem that can be obtained from it by means of the supplemental triangle.

8. In a spherical triangle prove

$$\cot A \sin C = \cot a \sin b - \cos b \cos C.$$

9. The two sides of a right-angled spherical triangle are 54° 28′ and 64° 10′ respectively; find the hypotenuse.

10. The sides of a spherical triangle are 33° 4′, 74° 16′ and 94° 18′ find the angle opposite the last mentioned side.

HONOUR EXAMINATIONS, 1897.

SECOND YEAR.

ANALYTICAL GEOMETRY (*First Paper*).

WEDNESDAY, APRIL 21ST :—MORNING, 9 TO 12.

Examiner.....ALEXANDER JOHNSON, M.A., LL.D.

1. Define the parabola, and find its equation reduced to its simplest form.

2. Find the equation of the tangent and normal to a parabola at any given point.

(*a*) Prove analytically that the tangent bisects the angle between the focal radius vector and the perpendicular from the point on the directrix.

3. Define the asymptotes of an hyperbola, and prove the property from which they derive their name.

4. Find the polar equation of the ellipse the focus being the pole.

5. In an ellipse the rectangle under the focal perpendiculars on the tangent is constant and equal to the square on the semi-axis minor.

6. The difference of the distances of any point on an hyperbola from the two foci is constant.

7. Find the equation of the tangent to a circle at any point on it.

8. Define pole and polar with respect to a circle, and find the equation of the polar of $x_1\ y_1$ with regard to the circle $x^2 + y2 = r2$.

9. Find the locus of the vertex of a triangle, being given the base and m times the square of one side + n times the square of the other.

10. Given the base and sum of sides of a triangle, if the perpendicular be produced beyond the vertex until its whole length is equal to one of the sides, find the locus of the extremity of the perpendicular.

11. Show that an equation of the first degree in x and y referred to oblique co-ordinates always represents a straight line.

12. Find the condition that the lines represented by three equations of the first degree shall meet at a point.

HONOUR EXAMINATIONS, 1897.

SECOND YEAR.

ANALYTICAL GEOMETRY (*Second Paper*).

WEDNESDAY, APRIL 21ST:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, M.A., LL.D.

1. Prove that, in general, a conic section can be described through five given points.

2. If through any point two real lines can be drawn to meet a conic section at infinity, parallel lines through any other point will meet the curve at infinity.

3. Show how a tangent may be drawn to a conic section from a point outside, by drawing straight lines only.

4. If the general equation of the second degree be transformed from one set of rectangular axes to another, the quantities $a + b$ and $ab - h$ will remain unchanged.

5. Prove that the rectangle under the segments of a focal chord of an ellipse is to the whole chord in a constant ratio.

6. Show that the equation of the hyperbola when referred to its asymptotes is

$$x\,y = \frac{a^2 + b^2}{4}$$

7. Three of the sides of a quadrilateral are represented by the equations $\alpha = 0$, $\beta = 0$, $\gamma = 0$ and two of the diagonals by $l\,\alpha - m\,\beta = 0$, and $m\,\beta - n\,\gamma = 0$. Show that the equation of the third diagonal is

$$l\,\alpha + n\,\gamma = 0.$$

8. If a straight line be such that the sum of the perpendiculars let fall on it from three fixed points each multiplied by a constant $= 0$, it will pass through a fixed point.

9. Given the base of a triangle and $\tan C = m \tan B$, find the locus of the vertex.

10. Given the vertical angle of a triangle and the sum of its sides, find the locus of the point where the base is cut in a given ratio.

11. Show that the equation of the right line joining two given points $x_2\ y_2\ ;\ x_3\ y_3$ is

$$\begin{vmatrix} x\ , & y\ , & 1 \\ x_2\ , & y_2\ , & 1 \\ x_3, & y_3, & 1 \end{vmatrix} = 0$$

12. If the two points in the previous question be joined to x_1, y_1, prove that twice the area of the triangle thus formed is expressed by the determinant

$$\begin{vmatrix} x_1, & y_1, & 1 \\ x_2\ , & y_2\ , & 1 \\ x_3, & y_3, & 1 \end{vmatrix}$$

(*a*) Calculate the area if the points are (2, 3), (4,—5), (—3,—6).

HONOUR EXAMINATIONS, 1897.

SECOND YEAR.

CALCULUS.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, M.A., LL.D.

1. Define a *continuous function*. Define *differential* and differential coefficient. Illustrate the meaning of differential coefficient geometrically.

2. Find the differential coefficient of sx^n, $\sin x$, $\sin^{-1} x$, $\log x$.

3. If $u = f(z)$ $z = \phi(x)$, prove

$$\frac{du}{dx} = \frac{du}{dz} \cdot \frac{dz}{dx}.$$

4. Differentiate

$$y = \sin(\sin x)\ ;\ y = \sin^{-1}(1 - x^2)^{\frac{1}{2}}\ ;$$

$$y = e^{x}\ ;\ y = \frac{(1-x^2)^{\frac{3}{2}} \sin^{-1} x}{x}.$$

5. Explain what is meant by infinitesimals of different orders—and prove that the difference between the length of an infinitely small portion of any continuous curve and its chord is an infinitely small quantity of the *third* order.

6. State and prove Maclaurin's Theorem.
   (*a*) Apply it to expand $y = a^x$ in a series of powers of x.

7. Find the value of $\dfrac{a \sin\theta - \sin A\theta}{\theta(\cos\theta - \cos A\theta)}$ when $\theta = 0$.

8. Find the value of $\cos x$, when

$$\frac{\sin^2 x}{\sqrt{5 - 4\cos x}} \text{ is a maximum.}$$

9. Integrate

$$\int \frac{dx}{1 + bx^2}\ ;\ \int \cos mx \cos nx\, dx$$

$$\int \frac{dx}{a + x - x^2}\ ;\ \int \frac{dx}{\sqrt{x^2 + a^2}}$$

10. Show how to find the integral

$$\int \frac{(p+qx)\,dx}{\sqrt{a+2bx+cx^2}}$$

11. Investigate the formula for integrations by parts and apply it to find

$$\int e^{ax}\,x\,dx\,;\quad \int \frac{\sin^{-1}x\,dx}{(1-x^2)^{\frac{3}{2}}}$$

12. Find the integral $\int \frac{dx}{x^2+6x+8}$

SESSIONAL EXAMINATIONS.

THIRD YEAR HONOUR MATHEMATICS.

STATICS.

SATURDAY, APRIL 10TH, 1897:—MORNING, 9 TO 12.

Examiner,..... JOHN COX, M.A.

1. If three forces keep a body in equilibrium, show that they either meet in a point or are parallel.

Two weights P, P, are attached to the ends of two strings which past over the same smooth peg and have their other extremities attached to the ends of a beam A B, the weight of which is W: show that the inclination of the beam to the horizon is $\tan^{-1}\left(\frac{a-b}{a+b}\tan\alpha\right)$; a, b being the distances of the centre of gravity of the beam from its ends, and $\sin\alpha = \frac{W}{2P}$

2. Define a couple, and prove that the effect of a couple is not altered if its arm be turned through any angle about one extremity in the plane of the couple.

3. State the Laws of Friction.

Two unequal weights on a rough inclined plane are connected by a string which passes through a fixed pulley in the plane; show that if α is the greatest inclination of the plane consistent with equilibrium,

$$\tan\alpha = \mu\frac{(W_1+W_2)}{W_1-W_2}$$

4. Explain the principle of Virtual Work, and show that the V W of two forces acting at a point is equal to that of their resultant. Fours

equal heavy rods are jointed to form a rhombus and hung up by one of the joints, which is fastened to the opposite corner by a string equal in length to one of the rods. Find the tension of the string, if the weight of each rod is w.

5. Find the centre of Gravity of
   (a) a pyramid on a triangular base.
   (b) the area included by the curve
$$r = a \cos 2\theta$$

6. Obtain the equations of equilibrium of a flexible string under the action of any forces.

If α, β are the inclinations to the horizon of the tangents at the extremities of a portion of a common catenary, and l the length of the portion, show that the height of one extremity above the other is
$$l \frac{\sin \frac{\alpha + \beta}{2}}{\cos \frac{\alpha - \beta}{2}}$$

7. An inextensible string without weight is stretched over a rough plane curve. Show that if T_1, T , θ_1, θ_2 be the tensions and inclinations of normals to any fixed line,
$$T_2 = T_1 e^{\mu(\theta_2 - \theta_1)}$$

What force can a man, who exerts a pull of 50 lbs. at one end of a rope coiled three times round a post ($\mu = \frac{1}{4}$), withstand when it is applied to the other end?

8. State Hooke's law for the extension of an elastic string.

An elastic string, weight w, modulus of elasticity λ, hangs with a weight P attached to the lower end. If lo, l are the natural and stretched lengths, show that
$$l = lo \left(1 + \frac{w + 2P}{2\lambda}\right)$$

HONOUR MATHEMATICS.

(B.A. AND THIRD YEAR.)

DYNAMICS.

TUESDAY, MARCH 30TH:—MORNING, 9 TO 12.

Examiner,.....JOHN COX, M.A.

1. Find expressions for the accelerations of a particle along and perpendicular to the radius vector.

2. An ellipse is placed with its major axis vertical; shew that the line of quickest descent from the upper focus to the curve makes an angle whose cosine is $\frac{1}{2e}$ with the major axis.

3. A particle is projected with velocity u at an elevation a to the horizon. Find the time of flight and the latus rectum of the parabola described.

Find the direction of projection with a given velocity from a given point so that a given inclined plane, not passing through the point, may be reached in the least possible time.

4. In what time will a mass of 12 lbs. hanging vertically draw a mass of 20 lbs. resting on a rough horizontal table ($\mu = \frac{1}{4}$) through 14 feet?

5. Two elastic balls, moving with given velocities, impinge directly. Explain how their subsequent motion is determined.

Shew that the mass of the ball which must be interposed between M_1 at rest, and M^1 moving with velocity V, so that M may acquire the greatest velocity, is $\sqrt{M\ M^1}$.

6. A particle, acted on by an attraction varying inversely as the square of the distance from a centre of force, moves from rest at distance a. Find the time occupied in reaching a point distant b from the centre.

With what speed would a body falling from an infinite distance to the earth reach the surface of the earth?

7. Prove the formulæ for a central orbit (1) $vp = h$ (2) $F = \frac{h^2}{p^3}\frac{dp}{dr}$

8. If the mass of the sun were suddenly increased by $\frac{1}{m}$th part of itself when the earth was at the end of the minor axis of its orbit, prove that the year would be diminished by $\frac{2}{m}$ of itself.

9. Prove that a seconds pendulum when taken to the top of a mountain h miles high will lose $21{\cdot}6h$ beats in a day nearly.

10. A particle is placed in one end of a smooth tube which is rotating with angular velocity w, in a horizontal plane, about that end. Determine the velocity and position of the particle in the tube at any time.

11. Shew how to determine the moment of inertia of a body about any axis through its centre of gravity in terms of its principal moments at the $C.\ G.$; and how to deduce its moment of inertia about an axis not passing through the $C.\ G.$

12. An ellipse is suspended by a peg through one focus. Find the time of a small oscillation and the length of the simple equivalent pendulum. Determine also the "Centre of Oscillation."

13. Express the Moment of Momentum and the energy of a body rotating with angular velocity ω about an axis about which its moment of inertia is K.

A ballistic pendulum is struck in a given spot and direction. Shew that the impulse of the blow will be measured by the sine of half the first swing.

14. A sphere of mass m and radius a rolls from rest, without slipping, down a plane inclined to the horizon at an angle i. Determine the motion.

HONOUR EXAMINATIONS IN MATHEMATICS AND NATURAL PHILOSOPHY.

B.A. AND THIRD YEAR.

ASTRONOMY.

FRIDAY, APRIL 9TH, 1897:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, M.A., LL.D.

1. Prove the formula for finding the latitude by observations in the pole star, viz.:

$$\text{latitude} = a - d\cos h + \tfrac{1}{2} d^2 \sin 1'' \tan a \sin^2 h$$

where a is the corrected altitude of the pole-star,
d = its polar distance,
h = its hour angle.

(*a*) Given $a = 46° 17' 28''$, the hour angle = 5h. 42m. 4.45s from upper culmination, and $d = 1° 23' 7''.63$, calculate the latitude of the place.

2. Investigate a formula for finding the parallax of the Moon in Right Ascension, being given its hour angle and declination, the latitude of the place and the horizontal parallax.

3. If the right ascension of a star be equal to its latitude, prove that its declination must be equal to its longitude.

4. If a and r be the radii of the orbits of the Earth and Venus (supposed circular), and E be the elongation of Venus, prove that when the planet is brightest

$$\cos^2 E + \frac{4}{3} \frac{r}{a} \cos E = \frac{4}{3}$$

5. If ω be the obliquity of the ecliptic, δ be the declination of the Sun when very near a solstice, and $90 - \alpha$ its right ascension at the same time, prove

$$\tan^2 \frac{\alpha}{2} = \frac{\sin(\omega - \delta)}{\sin(\omega + \delta)}$$

6. Show that the hour angle of a body (whose declination changes), when it has its greatest altitude, is given by the equation

$$t = \frac{4\,a}{5\,\pi} (\tan l - \tan \delta).$$

where a = hourly increase in seconds of arc.
l = latitude,
δ = declination,
t is the time in seconds.

7. If ϕ and ϕ' be the geographical and geocentric latitude, respectively, of a place, and c be the *compression*, prove that approximately

$$\phi - \phi' = c \sin 2\,\phi.$$

8. Assuming the length of a year, the distance of the sun in miles, and the velocity of light, calculate the constant of aberration approximately, giving any necessary investigation.

9. Show that the Sun's azimuth (A) at a given time of a given day may be found from the formulae

$$\cot A = \frac{\cot h \cos(x + l)}{\sin x}$$

$$\tan x = \cot \delta \cos h$$

h = the hour angle,
l = the latitude,
δ = the declination.

10. The length of the longest day at a given place is 14 hours, find the latitude, assuming the obliquity of the ecliptic to be 23° 28′.

B.A. AND THIRD YEAR HONOUR EXAMINATIONS, 1897.

MATHEMATICS AND NATURAL PHILOSOPHY.

CALCULUS.

WEDNESDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, M.A., LL.D.

1. If $U = u_0 + u_1 + u_2 + \ldots\ldots u_n$ where U is a function of x, y, z, and u_0, u^1, etc., are homogeneous functions of the degrees indicated, prove

$$x \frac{d U}{d x} + y \frac{d U}{d y} + z \frac{d U}{d z} = u_1 + 2 u_2 + 3 u_3 + \text{etc.}, + n u_n$$

(*a*) If $U = O$ prove

$$x \frac{d U}{d x} + y \frac{d U}{d y} + z \frac{d U}{d z} = -\left\{ u_{n-1} + 2 u_{n-2} + \text{etc} + n u_0 \right\}$$

2. Writing the equation of a plane curve of the Nth degree in the form,

$\phi(x, y) = u_0 + u_1 + u_2 + \text{etc} + u_n$ prove that the equation of the tangent at a given point x, y, is

$$X \frac{d \phi}{d x} + Y \frac{d \phi}{d y} + u_{n-1} + 2 u_{n-1} + \text{etc} + n u_0 = 0$$

where X, Y are the co-ords of any point on the curve.

3. Define the "Inverse" of a given curve, and prove that if two curves intersect at any angle, their inverse curves intersect at the same angle.

(*a*) Find the inverse with respect to the origin of the conic

$$u_2 + u_1 + u_0 = 0$$

4. Find the asymptotes to the curve

$$x^4 - y^4 = a^2 x y + b^2 y^2$$

5. If a cubic have three real asymptotes, prove that the points in which they meet the curve lie in the same right line.

6. Find the position and nature of the double points on the curve

$$(b x - c y)^2 = (x - a)^5$$

7. Find the envelope of the line

$$\frac{x}{a} + \frac{y}{b} = 1$$

when a and b are connected by the equation

$$a^m + b^m = c^m$$

8. In the curve $x^4 + x^2 y^2 + {}^4 = x\ (ax^2 - by^2)$

(1) Prove that if a and b have the same sign, the origin is a triple point, and the curve has three loops passing through the origin. Find the tangents.

(2) If a and b have opposite signs, the curve is a kind of oval. Trace it.

9. Prove that at any point of a body there is a system of rectangular planes for which the corresponding moments of inertia vanish.

10. Find the area of a portion of the surface of a sphere which is intercepted by a right cylinder, one of whose edges passes through the centre of the sphere, and the radius of whose base is half that of the sphere.

11. State and prove Guldin's theorem for finding the area of a surface of a revolution.

a Apply it to the case of the sphere.

12. Show that the rectification of the limaçon

$$r = a\cos\theta + b$$

may be made to depend on that of the ellipse whose axes are $a+b$ and $a-b$.

HONOUR EXAMINATIONS, 1897.

MATHEMATICS AND NATURAL PHILOSOPHY.

B.A. AND THIRD YEAR.

DIFFERENTIAL EQUATIONS.

FRIDAY, APRIL 23RD:—9 TO 12 A.M.

Examiner,..... ..... ALEXANDER JOHNSON, M.A., LL.D.

1. Write down the condition of integrability of an equation of the following form. Show that it is satisfied in the given case, and find the primitive :—

$$(y+a)^2\,dx + z\,dy - (y+a)\,dz = 0.$$

2. Solve the simultaneous equations

(*a*) $\dfrac{d^2x}{dt^2} - a\dfrac{dy}{dt} + \mu^2 x = 0$; $\dfrac{d^2y}{dt^2} + a\dfrac{dx}{dt} + \mu^2 y = 0$:

(*b*) $\dfrac{dx}{dt} - 3x + y = 0$; $\dfrac{dy}{dt} - x - y = 0$

3. Prove that the complete integral of

$$(y_2 + y_3 + u)\frac{du}{dy_1} + (y_3 + y_1 + u)\frac{du}{dy_2}$$

$$+ (y_1 + y_2 + u) \quad \frac{d u}{d y_3} = y_1 + y_2 + y_3$$

$$\text{is } \phi \{S^{\frac{1}{3}} (y_1 - u), S^{\frac{1}{3}} (y_2 - u), S^{\frac{1}{3}} (y_3 - u)\} = 0$$

$$\text{where } S = y_1 + y_2 + y_3 + u$$

4. If we put $e^{ax} X = Y$ and $D = \frac{d}{d x}$ where X is any function of x, prove that $f(D)\ Y = e^{ax} f(D + a) \{Y e^{-ax}\}$.

5. Solve the equation

$$\frac{d^4 y}{d x^4} + 2n^2 \frac{d^2 y}{d x^2} + n^4 y = 0$$

6. Solve the equation

$$(x - y^2)\, d x + 2 x y\ d y = 0$$

7. Integrate $\frac{d y}{d x} + \frac{x}{1 + x^2} y = \frac{1}{(x)(1 + x^2)}$.

8. Solve $y = x \frac{d y}{d x} + n x \sqrt{1 + \left(\frac{d y}{d x}\right)^2}$

9. Show that the orthogonal trajectory of the system of curves included under $y = c x^n$ is a family of conics.

10. Find by means of intermediate multipliers the solution of

$$\frac{d x}{d t} = a x + b y + c, \quad \frac{d y}{d t} = a x + b_1 y + c_1$$

B.A. HONOUR EXAMINATIONS IN MATHEMATICS AND NATURAL PHILOSOPHY, 1897.

PLANETARY THEORY.

THURSDAY, APRIL 1ST :—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, M.A., LL.D.

1. Investigate the equations of motion of a *disturbed* planet :—

$$\frac{d^2 x}{d t^2} + \frac{\mu x}{r^3} + \frac{d R}{d x} = 0.$$

$$\frac{d^2 y}{d t^2} + \frac{\mu y}{r^3} + \frac{d R}{d y} = 0.$$

$$\frac{d^2 z}{d t^2} + \frac{\mu z}{r^3} + \frac{dR}{dz} = 0.$$

2. Prove that the function R satisfies Laplace's equation

$$\frac{d^2 R}{d x^2} + \frac{d^2 R}{d y^2} + \frac{d^2 R}{d z^2} = 0.$$

3. Omitting the disturbing function, integrate the above equations for an undisturbed planet, and show that the orbit will be a conic section of which the Sun is in the focus—

(*a*) Find the eccentricity e in terms of the arbitrary constants introduced in the integral.

(*b*) Find the semi-axis major in terms of the same constants.

(*c*) Find the longitude of the perihelion projected on the plane of the ecliptic.

4. Explain the method of integrating the equations given in the first question.

5. If θ be the "longitude of the planet in its orbit,"

θ_1 ... the "reduced longitude,"

Ω the longitude of the node measured on the plane of the ecliptic,

prove $$\frac{dR}{d\theta_1} = \frac{d R}{d \theta} + \frac{d R}{d\Omega}$$

6. Prove $$\frac{d\varpi}{dt} = \frac{na\sqrt{1-e^2}}{\mu e} \frac{dR}{de} + \frac{na \tan\frac{i}{2}}{\mu\sqrt{1-e^2}} \frac{dR}{di}.$$

7. Explain the method of expanding the disturbing function.

8. Prove that the principal part of the co-efficient of a term in the expansion of R of the form $P \cos\{(pn - qn')t + Q\}$ is of the order $p \sim q$.

9. State and prove Lagrange's theorem concerning the stability of the eccentricities of the planetary orbit. State the facts of observation on which the conclusion depends.

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B. A. HONOUR MATHEMATICS.

HYDROMECHANICS AND THEORY OF LIGHT.

SATURDAY, APRIL 3RD:—MORNING, 9 TO 12.

Examiner.. .. .. JOHN COX, M.A.

1. Obtain the differential equation for the pressure at any point, in a fluid acted on by given forces.

2. A cylinder, height h and radius of base b, is half filled with water. With what velocity must the cylinder rotate about its axis (vertical), so that the fluid may just not run over ?

3. From a semi-circle, whose diameter is in the surface of a liquid, a circle is cut out, whose diameter is the vertical radius of the semi-circle ; find the centre of pressure of the remainder.

4. A cone, with vertex downwards, floats in water with three quarters of its axis immersed. Find the time of a small oscillation when it is slightly displaced in a vertical direction.

5. A faulty barometer indicated 29.2 and 30 inches, when a correct instrument gave 29.4 and 30.3 inches ; find the length of the tube which the air in the tube would fill under a pressure of 30 inches.

6. A soap film is stretched between two wire rings of radius a and b, symmetrically placed with their centres h apart upon a line perpendicular to their planes. Find the form of the surface of the film.

7. Employ the wave-theory of light to (1) account for the law of refraction (2) obtain the formula for a concave mirror

$$\frac{1}{d} + \frac{1}{D} = \frac{2}{r}.$$

8. Find the equation to the path of a particle subject to two simple harmonic vibrations at right angles, of equal periods, whose epochs differ by e.

How is the case treated when the periods are not quite equal ?

9. Explain the phenomena of Newton's rings, and obtain a formula for the intensity of the light reflected at any angle.

10. Explain the principles on which a Rowland concave grating is constructed.

11. Obtain the equation to Fresnel's wave-surface.

B.A. HONOUR EXAMINATIONS, 1897.

MATHEMATICS AND NATURAL PHILOSOPHY.

WEDNESDAY, APRIL 21ST :—MORNING, 9 TO 12.

SURFACES.

Examiner,..... ....ALEX. JOHNSON, M.A., LL.D.

1. Find the locus of the pole of a given plane with regard to a system of confocal surfaces.

2. Find the locus of points on the quadric

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

the normals at which intersect the normal at the point $x^1\ y^1\ z^1$.

3. Find the partial differential equation of conical surfaces.

4. Normals are drawn to the ellipsoid

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$$

at every point of its intersection with the sphere

$$x^2 + y^2 + z^2 = r^2,$$

prove that the equation to the curve in which the locus of these normals is cut by the plane of $y\ z$ is

$$\frac{b^2\ y^2}{a^2-b^2} + \frac{c^2\ z^2}{a^2-c^2} = a^2-r^2$$

5. Find the equation of the circular cylinder (radius $= r$) of which the axis is

$$\frac{x-a}{l} = \frac{y-\beta}{m} = \frac{z-\gamma}{n}$$

6. Find (a) the equations of the helix, and (b) of its osculating plane, and (c) the radius of curvature at any point.

7. Find the radius of curvature of any normal section of a surface meeting the tangent plane in a line whose direction angles are given.

8. Any tangent plane to a surface is intersected by a consecutive tangent plane in the diameter of the indicatrix which is conjugate to the direction in which the consecutive point is taken.

9. Two planes mutually perpendicular pass each through a fixed line; find the surface generated by their line of intersection.

10. The tangent plane to the hyperboloid of one sheet meets the surface in two right lines intersecting in the point of contact.

11. Give seven points common to a system of quadrics, prove that there is an eighth point common to the whole system.

12. Two confocal surfaces cut each other everywhere at right angles.

ENGLISH LANGUAGE AND LITERATURE.

SESSIONAL EXAMINATIONS, 1897.

FIRST YEAR.

LECTURES AND SYLLABUS.

WEDNESDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,..... .....CHAS. MOYSE, B.A.

(*Answer any fifteen questions of group* A. *The question under* B *is obligatory*).

(Answer the questions in order, strictly confine yourself to what is asked, and be careful as to the numbering of your answers).

1. Who led the English at the battle of Maldon? What feature of Teutonic life is strongly visible in the Anglo-Saxon poem? Name a writer of Homilies in Anglo-Saxon, and a translator of Bede into Anglo-Saxon.

2. In what poem does Tennyson describe the gate of Camelot? What, in a word, is the allegorical significance of the gate? What is the allegorical significance of Tennyson's Blue Knight? What became of Excalibur?

3. What proof is there that Chaucer knew of the existence of the sonnet in Italian? Who introduced the sonnet into our literature? Mention a leading difference between the Italian and English forms of the sonnet.

4. Although Chaucer used Boccaccio, show that he was ignorant of the authorship of Boccaccio's works. Mention with precision some one thing noteworthy in the dress or character of Chaucer's Knight and Clerk of Oxenford. What event aroused the enmity of Becket and led to his murder?

5. Mention one important fact regarding (*a*) the education of the Elizabethan dramatist; (*b*) joint authorship. Indicate the position of Blackfriars and the Bankside.

6. Mention two marks of the influence of Seneca on our drama. In what language did Seneca write? Who was Ferrex?

7. For whom was our first comedy written? What Latin play does it resemble? Name the corresponding pairs of characters in both plays.

8. What feature of Theocritean pastoral is seen in the November Eclogue of the *Shepheards Calender?* Who was Spenser's immediate model? What poem of Spenser describes the meeting of Spenser and Ralegh? Mention some interesting fact about it.

9. Show that the Pindaric Ode appears in Elizabethan literature. What is the best monody of the French school? Name a writer famous for Pindaric Odes. Show that the title Pindaric Ode need not imply elaborate construction.

10. Whence and in whose reign was the Masque introduced into our literature? Mention some particular in Milton's *Comus* which displays an essential of the masque, and another which shows that *Comus* differs from the ordinary masque.

11. Who first translated Montaigne's Essays into English? What does Montaigne declare to be the purpose of his Essays? Give, in a word or two the precise meaning of *essay*. What work of Selden was mentioned in connection with Essay-literature?

12. What play was mentioned as giving a bare list of murdered characters at the end? Who reads extracts from it to Captain Bobadil and what does Bobadil think of it? In what play does Bobadil appear?

13. Name the members of the Spectator club and say what each represents?

14. Indicate very briefly what the following illustrate: Clove and Orange; Don Adriano de Armado; John Taylor, the Water Poet; *The Rape of the Lock.*

15. Mention four critical essayists and name a work of each.

16. Make a brief note on the *Shortest Way with the Dissenters*, Gray's *Ode on Eton College*, Ephraim Chambers, Isaac Bickerstaff.

17. Give the dates of (*a*) the First Folio of Shakspere, (b) Chaucer's death, (*c*) Spenser's death, (*d*) Lyly's *Euphues.*

B.

Write on literary reform in France in the sixteenth and seventeenth centuries. (Do not let your answer exceed one page).

EXAMINATION FOR HONOURS IN ENGLISH LITERATURE AND HISTORY.

THIRD YEAR.

SATURDAY, MARCH 27TH :—9 TO 12 A.M.

Examiners, ... { CHAS. E. MOYSE, B.A.
C. W. COLBY, PH. D.
J. S. SMART, M.A.

(Write the answers to the questions of groups A and B in separate books.)

A.

1. "The princes who succeeded according to the Act of Parliament which settled the crown on the Electress Sophia and on her descendants, being Protestants, came in as much by a title of inheritance as King James did."—*Burke.*

"The monarchy obviously rested in a parliamentary title, and claims like those of the Stuarts were too gross an anachronism."—*Leslie Stephen.*

Compare and discuss these statements.

2. What was the condition of the French army in 1791, and what results did Burke expect to follow upon it? Were his expectations realized?

3. What was the policy of the French Assembly in regard to the church lands and the currency?

4. Explain the following allusions:

(*a*) "The atrocious spectacle of the sixth of October, 1789."

(*b*) "The academies of the Palais Royal and the Jacobins."

(*c*) "They divide the area of their country into eighty-three pieces, regularly square, of eighteen leagues by eighteen."

(*d*) "We have rebuilt Newgate, and tenanted the mansion."

(*e*) "The very inequality of representation, which is so foolishly complained of, is perhaps the very thing which prevents us from thinking or acting as members for districts."

5. Who were M. Necker, Lord Somers, Henry of Navarre, Dr. Peters, Charles the Ninth, the Anabaptists of Münster?

B.

1. Describe Rousseau's political theories, connecting him, wherever possible, with Montesquieu, Locke, and Hobbes.

2. Write on the state of parties during the reign of George III.

3. State the leading points which Stephen makes in connection with:

(*a*) Adam Ferguson;
(*b*) Burke's "Vindication of Natural Society;"
(*c*) Priestley's Treatise on Government;"
(*d*) Mary Wollstonecraft;
(*e*) Malthus.

EXAMINATION FOR HONOURS IN ENGLISH.

THIRD YEAR.

SPENSER: *Shepheard's Calendar; Faerie Queene*, BK. I.

THURSDAY, APRIL 1ST:—9 TO 12 A.M.

Examiner,..... ..... CHAS. E. MOYSE, B.A.

1. Write on the development of Pastoral poetry, and show that Spenser's pastoral exhibits the whole range of pastoralism.

2. Give an outline of the May Eclogue (Piers and Palinode).

3. Make notes on the following names: Tityrus, Algrind, Sir John, Roffy, Colin Cloute. Give the meaning of the following words: unnethes, stoure, surquedrie, wast bignes, todde, encheason, borrell, peregall, stanck, crumenall.

4. Why does Spenser choose Arthur as the hero of the Faerie Queene What does Spenser say about "the second day" in his prefatory letter?

5. Trace the Red Cross Knight through the First Book, explaining the allegory when necessary.

6. Give an account of (*a*) Lucifera's coach, (*b*) Despair and his cave, (*c*) the House of Holiness.

7. Give the meaning (and nothing more) of the following words:—yfere, tort, portesse, gobbet, fond, embard, essoyne, stadle, pardale, housling.

EXAMINATION FOR HONOURS IN ENGLISH.

THIRD YEAR.

WORDSWORTH, *Prelude;* CAMPBELL, *Pleasures of Hope.*

SATURDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner.....CHAS. E. MOYSE, B.A.

1. Explain the following allusions, and state very briefly but pointedly in what connection each is found:—

(*a*) vanquished Mithridates.
(*b*) the vast city where I long had pined.
(*c*) a shattered
Monument of feudal sway.
(*d*) the vale
Of Nightshade.
(*e*) Three Gothic courts are his.
(*f*) his tales
Of amorous passion.
(*g*) The famous brook.
(*h*) A dedicated spirit.
(*i*) ye knew him well, ye cliffs
And islands of Winander.
(*k*) towns
Gaudy with reliques of that festival.
(*l*) every mimic shape
Cased in the gleaming mail the monarch wore.
(*m*) Gehol's matchless gardens.
(*n*) Ere Phœbe sighed for the false Ganymede.
(*o*) Such conversation, under Attic shades,
Did Dion hold with Plato.
(*p*) "I, Robespierre, accuse thee."
(*q*) And on the stone were graven by his desire
Lines from the churchyard elegy of Gray.
(*r*) and rueful woes
Didst utter of the Lady Christabel.
(*s*) "Stay, stay, your sacrilegious hands."
(*t*) "'Tis against that
That we are fighting."

2. State very briefly Wordsworth's feelings regarding (*a*) the reading of fiction, (*b*) the relative importance of man and nature, (*c*) the impressions made by the same spot at different times, (*d*) Classics and Mathematics, (*e*) Salisbury Plain.

3. Give the substance of Wordsworth's description of (*a*) the Chartreuse, (*b*) his meeting with a soldier near Hawkshead, (*c*) his hearing the news of Robespierre's death.

4. Give, in a page, a sketch of Campbell's early life.

5. Indicate or quote the context of

(*a*) Erie's banks, (*b*) Carmel's heights, (*c*) Iona's saint, (*d*) Congo's chief, (*e*) the Rhodian's mimic art, (*f*) "Sleep, image of thy father," (*g*) the Bruce of Bannockburn, (*h*) Newton, priest of Nature, (*i*) Driaper's swampy shore, (*j*) "who will protect thee, helpless Ellenore," (*j*) the Swedish sage.

6. State the leading thought with which each of the extracts of the previous question is connected.

7. Quote a few lines (not more than ten) of any *two* of the following passages :

(*a*) In vain, alas ! in vain, ye gallant fair !
(*b*) At summer eve, when Heaven's eternal bow
(*c*) Oh ! lives there, Heaven ! beneath thy dread expanse
One hopeless, dark idolator of Chance ?
(*d*) Till Hymen brought his love-delighted hour.

8. Write in a page a criticism of Campbell's poetry.

EXAMINATION FOR B.A. HONOURS IN ENGLISH.

MOESO-GOTHIC AND EARLY ENGLISH.

TUESDAY, APRIL 6TH :—9 TO 12 A.M.

Examiner.....CHAS. E. MOYSE, B.A.

A.

Translate :—

1. Jah air uhtwon usstandands usiddja, jah galaith ana authjana stath, jah jainar bath.

Give the principal parts of the strong verbs and of their Anglo-Saxon representatives.

2. Jah kwemun at imma uslithan bairandans hafanana fram fidworim. Joh ni magandans nehwa kwiman imma faura manageim, andhulidedun hrot tharei was Iesus ; jah usgrabandans insalidedun thata badi jah fralailotun, ana thammei lag sa uslitha.

Parse hafanana and decline *sa*.

3. Jah jabai gards withra sik gadailjada, ni mag standan sa gards jains.

Parse *gadailjada* and decline *gards*.

4. Jah saurgos thizos libainais jah afmarzeins gabeins jah thai bi thata anthar lustjus in atgagggandans afhwapjand thata waurd, jah akranaïaus wairthith.

Decline *waurd* and conjugate the tense of *wairthith*.

5. Jah hropjands stibnai mikilai kwat: hwa mis jah thus, Iesu, sunai guths, this hauhistins? biswara thuk bi gutha, ni balwjais mis!

Conjugate the tense of *kwat* and decline *mis* in all numbers.

B.

1. Tharfor says clerkes of grete cunnyng,
That syn es swa foule and swa grisly thyng,
That if a man mught properly se his syn
In the kynd lyknes that it falles be in,
He shuld for ferdnes titter it fle
Than any deuel that he mught se.

2. The princes, that war riche on raw,
Gert nakers strike and trumpes blaw,
And made mirth at thair might;
Both alblast and many a bow
War redy railed opon a row,
And ful frek forto fight.

3. & as bliue, boute bod · he braydes to the quene,
& hent hire so hetterly · to haue hire a-strangeled,
That hire deth was neig digt · to deme the sothe.
but carfuli gan sche crie · so kenely and lowde,
that maydenes & migthi men · manliche to hire come,
& wolden brusten the best · nad he be the ligttere,
& fled a-way the faster · in-to ferre londes,
so that pertely in-to poyle · he passed that time,
as this fortune bi-fel · that i told of bi-fore;
thus was this witty best . werwolf ferst maked.

4. Bot that other wrake that wex · onwyges hit lygt
Thurg the faut of a freke · that fayled in trawthe,
Adam in-obedyent · ordaynt to blysse;
Ther pryuely in paradys · his place wats de-vised,
To lyue ther in lykyng · the lenthe of a terme,
& thenne en-herite that home · that aungeles for-gart.
Bot thurg the eggyng of eue · he ete of an apple,
That en-poysened alle peples · that parted fro hem bothe,
For a defence, that wats · dygt · of drygtyn seluen,
& a payne ther-on put · & pertly halden.

5. For hit is brod & bothemles · & bitter as the galle,
& nogt may lenge in that lake · that any lyf beres,
& alle the costes of kynde · hit combres vchone ;
For lay ther on a lump of led · & hit on loft fletes,
& folde ther-on a lygt fyther · & hit to founs synkkes.
& ther [that] water may walter · to wete any erthe,
Schal neuer grene ther-on growe · gresse ne wod nawther.
If any schalke to be schent . wer schowued ther-inne,
Thag he bode in that bothem · brothely a monyth,
He most ay lyue in that loge · in losyng euer-more,
& neuer dryge no dethe · to dayes of ende,
&, as hit is corsed of kynde · & hit coostes als,
That clay that clenges ther-by · arn corsyes strong,
As alum & alkaran · that angre arn bothe,
Soufte sour, & saundyuer · & other such mony ;
& ther waltes of that water · in waxlokes grete,
The spuniande aspaltoun · that spyseres sellen ;
& suche is alle the soyle · by that se halues,
That fel fretes the flesch · & frestred bones.

6. Ligtliche Lygere · leop a-wey thennes,
Lurkede thorw lones · to-logged of Monye ;
He has nougwher wel-come · for his mony tales,
Bote ouur al I-hunted · and hote to trusse.
Pardoners hedden pite · and putten him to house,
Wosschen him and wrongen him · & wounden him in cloutes,
And senden him on sonendayes · with seales to churches,
And gaf pardun for pons · poundmele a-boute.

7. Thenne I drougme a-mong this drapers · my Donet to leorne,
To drawe the lyste wel along · the lengore hit semede ;
Among this Riche Rayes · lernde I a Lessun,
Brochede hem with a pak-neelde · & pletede hem togedere,
Putte hem in a pressour · & pinnede hem ther-Inne
Til ten gerdes other twelue · tolden out threttene.

8. He bar a bordun I-bounde · with a brod lyste,
In A wethe-bondes wyse · I-writhen aboute.
A Bagge and a Bolle · he bar bi his syde ;
An hundred of ampolles · on his hat seeten,
Signes of Synay · anp Schelles of Galys ;
Moni Cros on his cloke · and keiges of Rome,
And the vernicle bi-fore · for men schulde him knowe.
And seo be his signes · whom he souht hedde.

9. Thys manere was moche y-vsed to-fore the furste moreyn, & ys seththe somdel ychaunged. For Iohan Cornwal, a mayster of gramere, chayngede

the lore in gramer-scole, & construccion of Freynsch in-to Englysch; & Richard Pencrych lurnede that manere techyng of hym, & other men of Pencrych; so that now, the ger of oure Lord a thousond thre hondred foure score & fyue, of the secunde kyng Richard after the conquest nyne, in al the gramer-scoles of Engelond children leueth Frensch & construeth & lurneth an Englysch, and habbeth ther-by avauntage in on syde & desavauntage yn another; here avauntage ys, that a lurnoth here gramer yn lasse tyme than childern wer ywoned to do—disavauntage ys, that now children of gramer-scole conneth no more Frensch than can here lift heele, & that ys harm for ham, & a scholle passe the se & trauayle in strange londes, & in meny caas also.

Translation at sight.

Pellican is a leane fuwel, sǫ weamod & sǫ wrethful thet hit sleath ofte vor grome his ǫwune briddes, hwon heo teoneth him, ant theonne sone ther-efter hit bicumeth swuthe sǫri, & maketh swuthe muche mǫne, & smit him sulven mid his bile thet hit slouh er his briddes mide, & drauhth ut blod of his breoste, & mit tet blod acwiketh eft his isleine briddes. This pellican is the weamode ancre. Hire briddes thet beoth hire gode werkes, thet heo sleath ofte mid bile of schearpe wreththe. Auh hwon heo sǫ haveth idon, do ase deth the pellican: ofthunche hit swuthe sone, & mid hire ǫwune bile bekie hire breoste; thet is, mid schrifte of hire muthe thet heo sunegede mide & slouh hire gode werkes, drawe the blod of sunne ut of hire breoste, thet is, of the heorte, thet sǫule lif is inne, & sǫ schulen eft a-acwikien hire isleiene briddes, thet beoth hire werkes.

B.A. EXAMINATION FOR HONOURS IN ENGLISH LITERATURE AND HISTORY.

SHAKSPERE: *Love's Labors Lost; A Midsummer Night's Dream; Hamlet; The Tempest.*

TUESDAY, MARCH 30TH:—9 TO 12 A.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / J. H. SMART, M.A.

(Write the answers to sets A and B in different books.)

A.

1. Mention the chief characteristics of Euphuism, and give two illustrations of each from L.L.L. Name the speakers.

2. "Things are not what they seem." Apply to L.L.L.

3. Set forth the "balance" of the Dream; (*b*) give an outline of Oberon's vision and a current explanation of its allegory.

4. Give an outline of the speeches in which the following expressions occur, and state in a single sentence what you conceive to be the leading trait of the character of each speaker: Ercles' vein; so flew'd.

5. State who utter the following words and expressions, and also in what part of Hamlet each occurs: *razed shoes; with windlasses and assays of bias;* the morn, in russet mantle clad; *crants;* Vaughan. Give the meaning of those in italics.

6. What are the marks of Senecan influence on the English drama? Do you find them in *Hamlet?*

7. Justify or controvert two leading objections of critics to *Hamlet.*

8. Devoting a few lines to each, indicate the characters of four leading persons in *Hamlet.* As you do so, refer to scenes from which you have formed your opinion, but do not quote.

B.

1. Discuss the date of *The Tempest* and its position among Shakspere's plays.

2. Discuss the character of Caliban.

3. Explain the following: yare: absolute Milan: at least two glassess urchin-shows; pole-clipt vineyard; hang them on this line.

THIRD YEAR EXAMINATION FOR HONOURS IN ENGLISH.

MILTON:—*Minor Poems.*

TUESDAY, APRIL 6TH:—2 TO 5 P.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Whence are the following lines taken?—
   (*a*) Young Hyacinth the pride of Spartan land
   (*b*) The oracles are dumb
   (*c*) Dear son of memory, great heir of fame
   (*d*) Thou with fresh hope the lover's heart dost fill

   Give an outline of the thought of Milton's sonnet "On his being arrived to the age of 23." What characteristic mood is conspicuous there? From different poems of Milton preceding *L'Allegro* select three ideas which appear to you to be forced. (The Hobson poems are not to be used.) Similarly, quote three passages, each of a line or two, which appear to you to show distinct power of melody.

2. Which of the two poems *L'Allegro* and *Il Penseroso* seems to reflect the more characteristic mood of Milton's mind? Briefly substantiate your answer.

Show that the sounds mentioned in the two poems harmonize with the general mood of each.

3. Give the meaning of the following epithets found in *L'Allegro* and *Il Penseroso*, and refer them (*a*) to the word which they qualify, and (*b*) to the divisions of the poems in which they stand: old, lubber, idle, starred, pied, unreproved, secure, decent, kerchieft, brown.

4. Whence was the masque introduced into England? in whose reign? In which of Shakespere's plays do we find a complete masque?

5. In whose honour was Arcades written? where was it performed? In what relationship did the performers stand to the person honoured? What does the Genius of the Wood do "ere the odorous breath of morn?" and also "in deep of night?" Explain allusions which require comment.

Where and how is Arcadia referred to by name in *Arcades?* What spots has Milton picked out in Arcadia? say what each is.

6. In whose honour was Comus written? where was it performed? In what relation did three of the performers stand to the person honoured? Give their names. Who took the part of Thyrsis?

7. Point out similarities between Comus and Peele's Old Wives' Tale.

8. How does the Elder Brother

Call
Antiquity from the old schools of Greece
To testify the arms of chastity?

With what argument does the Lady directly meet Comus' appeal to the lavishness of Nature?

9. What do you learn from *Comus* of the history of Sabrina?

SESSIONAL EXAMINATIONS, 1897.

THIRD YEAR.

CHAUCER: *Prologue to the Canterbury Tales.*

RHETORIC.

WEDNESDAY, APRIL 7TH:—2 TO 5 P.M.

Examiners, ... { CHAS. E. MOYSE, B.A. / P. T. LAFLEUR, M.A.

Write the answers to sets A and B in different books.

A

1. Name (*a*) the classical Latin poet, (*b*) the writer in Latin prose, with whose writings Chaucer was most familiar? Does Chaucer mention the names of the three great Italian poets from whom he borrowed? Show that in his own day Chaucer's fame had extended beyond his native land.

2. Mention two important commercial centres in the part of France which belonged to England. Where and in what way is one of them referred to in the *Prologue?* Quote the lines which describe the wearing of figures of saints, and name the pilgrims concerned.

3. Refer to Chaucer's description of the Squyer, Nonne, Monk, Frankeleyn, in connection with the fashions of the table and food.

4. Name the pilgrim to whom each of the following lines refers:
(*a*) Him wolde he snibben sharply for the nones.
(*b*) In youthe he learned had a good mister.
(*c*) A voys he hadde as smal as hath a goot.
(*d*) A fewe termes hadde he two or three.
(*e*) A daggere hanging on a laas hadde he.
(*f*) His eyen stepe and rollinge in his heed.
(*g*) He knew the tavernes wel in every toun.
(*h*) His berd as any sowe or fox was reed.

5. Show the difference between Chaucerian and Modern English in regard to the following particulars: negation, the appositional use of *of*, numeral adverbs in *ce*, the plural of the present tense of the verb, the verb *can*. Give a line illustrating each.

6. Give the meaning (and nothing more) of the following words: baw, drick, som-del, stepe, stemed, knarre, colpons, gobet, aller, haunt, it thoughte me.

B.

1. Explain carefully, with examples, the difference between the literal and the figurative style.

2. State the rhetorical conditions on which the attainment of energy in style is said to depend; and discuss fully, with examples, any *one*.

3. Explain and illustrate: Antithesis, Exposition by Definition, Panoramic Description, Emphatic repetition in oratory.

4. Discuss any *one* of the conventional divisions of a regular argumentative discourse or address.

5. Write a short composition, consisting of two or three paragraphs, on any *one* of the following subjects:—
(*a*) The objects of Literary Criticism.
(*b*) The meaning of the word "Plot" in the drama.
(*c*) The limitations of pictorial description.

EXAMINATION FOR HONOURS IN ENGLISH.
ANGLO-SAXON.

TUESDAY, MARH 30TH :—9 to 12 A.M.

Examiner.....CHAS. E. MOYSE, B.A.

A.

1. He sæde thaet he æt sumum cirre wolde fandian hu longe thæt land northryhte læge, oththe hwæther ænig monn be northan thæm westenne bude.

Mark the long quantities.

2. With suthan thone Sciringes heal fylth swyhthe mycel sæ up inn on thæt lond ; seo is bradre thonne ænig mann ofer seon mæge. And is Gotland on othre healfe ongean, and siththan Sillende. Seo sæ lith mænig hund mila up inn on thæt land.

Parse fylth and lith, and give their principal parts.

3. On thæm landum eardodon Engle, ær hi hider on land coman. And hym wæs tha twegen dagas on thæt hæcbord tha igland the inn on Denemearce hyrath.

4. And thonne his gestreon beoth thus eall aspended, thonne byrth man hine ut, and forbærneth mid his wæpnum and hrægle; and swithost ealle hys speda hy forspendath mid thæm langan legere thæs deadan mannes inne, and thæs the hy be thæm wegum alecgath, the tha fremdan to ærnath, and nimath.

5. And thær is mid Estum an mægth thæt hi magon cycle gewyrcan ; and thy thær licgath tha deadan menn swa lange, and ne fuliath, thæt hy wyrcath thone cyle him on.

B

Tha gegaderade Ælfred cyning his fierd, ond for thæt he gewicode betwuh thæm twam hergum, thær thær he niehst rymet hæfde for wudufæstenne ond for wæterfæstenne, swa thæt he mehte ægtherne geræcan, gif hie ænigne feld secan wolden. Tha foron hie siththan æfter thæm wealda hlothum ond flocradum, bi swa hwatherre efes swa hit thonne fierdleas wæs.

Tha hie on Eastseaxe comon to hiora geweorce ond to hiora scipum, tha gegaderade sio laf eft of Eastenglum ond of Northhymbrum micelne here onforan winter, ond befæston hira wif ond hira

scipu ond hira feoh on Eastenglum, ond foron anstreces dæges ond nihtes thæt hie gedydon on anre westre ceastre on Wirhealum, seo is Legaceaster gehaten. Tha ne mehte seo fird hie na hindan offaran, ær hie wæron inne on thæm geweorce; besæton theah thæt geweorc utan sume twegen dagas, ond genamon ceapes eall thæt thær buton wæs, ond tha menn ofslogon the hie foran forridan mehton butan geweorce, ond thæt corn eall forbærndon, ond mid hira horsum fretton on ælcre efenehthe. Ond thæt wæs ymb twelf monath thæs the hie ær hider ofer sæ comon.

C.

Wearth him on Heorote to handbanan
wælgæst wæfre; ic ne wat hwæder
atol æse wlanc eftsithas teah,
fylle géfrægnod. Heo tha fæhthe wræc.
the thu gystranniht Grendel cwealdest
thurh hæstne had heardum clammum,
for than he to lange leode mine
wanode and wyrde. He æt wige gecrang
ealdres scyldig, and nu other cwom
mihtig manscatha, wolde hyre mæg wrecan.
ge feorr hafath fæhthe gest led.
thæs the thincean mæg thegne monegum.
se the æfter sincgyfan on sefan greoteth
hretherbealo hearde; nu seo hand ligeth,
seo the eow wel-hwylcra wilna dohte.
Sona wæs on sunde se the ær æt sæcce gebad
wighryre wrathra, wæter up thurhdeaf:
wæron ythgebland eall gefælsed.
eacne geardas, tha se ellorgæst
oflet lifdagas and thas lænan gesceaft.
Com tha to lande lidmanna helm
swithmod swymman, sælace gefeah,
mægenbyrthenne thara the he him mid hæfde.
Eodon him tha togeanes, Gode thancedon,
thrythlic thegna heap theodnes gefegon,
thæs the hi hyne gesunde geseon moston.

D.

To heanlic me thinceth
thæt ge mid urum sceattum to scype gangon
unbefohtene, nu ge thus feorr hider

on urne eard inn becomon ;
ne sceole ge swa softe sinc gegangan :
us sceal ord and ecg ær geseman,
grimm guthplega, ær we gafol syllon.
" Ic the thancige theoda Waldend,
ealra thæra wynna the ic on worulde gebad :
nu ic ah, milde Metod, mæste thearfe,
thæt thu minum gaste godes geunne,
thæt min sawul to the sithian mote,
on thin geweald, theodon engla,
mid frithe ferian ; ic eom frymdi to the,
thæt hi hellsceathan hynan ne moton

Him se gysel ongann geornlice fylstan :
He wæs on Northhymbron heardes cynnes.
Ecglafes bearn, him wæs Æscferth nama :
he na wandode na æt thàm wigplegan,
ac he fysde forth flan geneahhe :
hwilon he on bord sceat, hwilon beorn tæsde
æfre embe stunde he sealde sume wunde,
tha hwile the he wæpna wealdan moste.

E.

Næs tha dead tha gyt,
ealles orsawle : sloh tha eorneste
ides ellenrof othre sithe
thone hæthenan hund, thæt him thæt heafod wand
forth on tha flore ; læg se fula leap
gesne beæftan, gæst ellor hwearf
un ler neowolne næss and thær genytherad wæs,
susle gesæled syththan æfre,
wyrmum bewunden, witum gebunden,
hearde gehæfted in hellebryrne
æfter hinsithe.

Hi tha fromlice fagum swyrdum
hæleth higerofe herpath worhton
thurh lathra gemong, linde heowon,
scildburh scæron : sceotend wæron
guthe gegremede, guman Ebreisce,
thegnas on tha tid thearle gelyste
gargewinnes. Thær on greot gefeoll

se hyhsta dæl heafodgerimes
Assiria ealdorduguthe,
lathan cynnes: lythwon becom
cwicera to cyththe.

F.

Gif hit wære esa gescot, oththe hit wære ylfa gescot,
oththe hit wære hægtessan gescot, nu ic wille thin helpan:
this the to bote esa gescotes, this the to bote ylfa gescotes,
this the to bote hægtessan gescotes: ic thin wille helpan.
Fleo on fyrgenheafde;
hal wes-tu! helpe thin Drihten!
Nim thonne thæt seax, ado on wætan.

G.

Ic wiht geseah wundorlice
hornum bitweonum huthe lædan,
lyftfæt leohtlic listum gegierwed,
huthe to tham ham of tham heresithe:
Sanges rowe,

heapum ferath, hlude cirmath,
tredath bearonæssas, hwilum burgsalo
niththa bearna; nemnath hy sylfe!

1. Name the A.S. dialects. In which is Cædmon's Hymn written? What are the two subdivisions of the classical A. S. dialects?

2. Compare the A.S. and Modern English alphabets.

3. Explain the terms palatalization and breaking, and give examples.

4. Explain umlaut, and give an instance of each kind of umlaut.

5. Give the principal parts of cwellan, bindan, téon, céosan, lufian, beran, faran. Write out the past tense, indicative and subjective, of beran, céosan, lufian.

6. Conjugate wesan and béon in full.

7. Decline dæg, sunu, word, in both numbers.

8. Give the comparative and superlative of the following adjectives léof, eald, héah, micel, lang.

9. Decline fully, sé, ic, thú, thæs.

10. What is the meaning of each of the following prefixes? a, ed, ge, un; of the following suffixes?—ing, ære, léas.

11. Scan:

geatolic gengde, gumfethe stop
lindhæbbendra, eastas wæron
æfter waldswathum wide gesyne.
gang ofer grundas.

EXAMINATION FOR HONOURS IN ENGLISH 1897.

THIRD YEAR.

MORRIS and SKEAT: *Specimens of Early English*, Extt. I-IX.
CHAUCER: *The Parlement of Foules.*

THURSDAY, APRIL 22ND:—9 TO 12 A.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Translate:—

Tho Willam bastard hurde telle · of Haraldes suikelhede,
Hou he adde ymad him king · & mid such falshede,
Vor that lond him was bitake · as he wel (hit) wuste,
To wite hit to him wel · & he wel to him truste.
As the hende he dude verst · & messag*e*rs him sende,
That he vnderstode him bet · is dede vor to amende,
& thog*t*e on the grete oth · that he him adde er ydo,
To wite him wel Engelond · & to spousi is dog*t*er also;
& hulde him th*e*r-of vorewarde · as he bihet ek the kinge,
& bote he dude bi-time he wolde · sende him oth*e*r tidinge,
& seche him out ar tuelf monthe · & is rig*t*es winne,
That he ne ssolde abbe in al Engelond · an h*e*rne to wite him inne.
Harald him sende worde · ' that folie it was to truste
To such oth, as was ido · mid strengthe, as he wel wuste;
Vor *gif* a maide treuthe ipligt · to do an fole dede
Al one priueliche · withoute hir*e* frendes rede,
Thulke vorewarde were uor nog*t* · & watloker it ag*t*e her,
That ich suor an oth, that was · (tho) al in thi poer,
With-owte conseil of al the lond · of thing that min nog*t* nas.
Th*e*r-uore nede oth isuore · nede ibroke was.

(b) The ssetare donward al uor nogt · vaste slowe to gronde
So that Harald thoru then eie · issote was dethes wounde.
& a knigt that isei · that he was to dethe ibrogt,
& smot him, as he lay binethe · & slou him as uor nogt.
Fram that it was amorwe · the bataile ilaste strong,
Vor-te it was hei midouernon · & that was somdel long.
Moni was the gode dunt · that duc Willam gef aday;
Vor thre stedes he slou · vnder him, as me say,
Vorpriked, & uor-armd aboute · & uor-woundedalso,
& debrused agen dedemen · ar the bataile were ido.

(c) Ac gif that child icristned his,
Ac me fot, as me hit weneth,
Thise habbeth forme ther-of
A Latin that ham geineth
Te depe;
And ich schel seggen hit an Englisch,
Nou ther-of neme ge kepe;

(d) Ac get ther beth cristnynges mo,
Ac no man ne may digtti;
For hi beth Godes grace self,
Men of gode wil to rigti
And wynne,
Wanne hi wolde icristned be,
And moge mid none ginne.

(e) Ich yzeg the ilke onspekynde / an on-todelinde magesté of the holy trinyté. be-gynnynge / ne ende ne heth. Ac and lygt ther-inne woneth / thet me ne may nagt come to. Vram tho lygte byeth y-thorsse mine egen / and the zygthe thyester. Hyt ouergeth uorzothe alle wyttes / and alle zygthes. the ilke bryg(t)nesse. and the ilke uolnesse. Thagles a lytel ich yzeg oure lhord iesu crist / ine rigt half zittinde. thet is to zygge: ine the lyue wyth-oute ende regnynde. Thag he ouer alle ssepthes by zuo uayr: thet ine him wylneth the angles to zyenne. yet nou the wound en and the toknen of the passion he heth ine his bodye. huermyde he ous bogte. be-uore the uader uor ous stant uor to bydde. Ich y-zeg nyxt iesu crist the ilke blisfolle mayde / and moder the ilke zodes / and oure lhordes iesu cristes / myd alle worthssipe and reuerence / y-nemned marie / ine the wonderuolle trone zittynde / aboue alle the holy ordres of angles / and of men: an-heged. hire zone iesus uor ous byddinde. and to huam hi is uol of merci. Ac the ilke wonderuolle magesté / and the brigtnesse of the moder / and of the zone: ich ne mygte nagt longe tholye / ich wente myne zigthe uor to yzi / the ilke holy ordres of the gostes; thet stondeth beuore god. of huichen the eurelestinde holynesse of the zigthe

of god / an of the loue. ne hit ne ssel lessi ; ne hit ne ssel endi / ac eure wexe and blefth.

2. In what dialect is each of the foregoing extracts written ?

3. Translate the following expressions:
(*a*) that alwey slit so yerne.
(*b*) I mette.
(*c*) For what that on may hale that other let.
(*d*) hir facounde gent.
(*e*) The day hem blent.
(*f*) Lat ech of hem be soleyn.
Say precisely where (*c*), (*d*), (*e*) and (*f*) occur.

4. Name the sources from which Chaucer has taken the following lines:
(*a*) the derke night
That reveth bestes from hir besinesse.
(*b*) The wery hunter, slepinge in his bed.
(*c*) Thorgh me men goon into that blisful place.
(*d*) Sawe I Delyt that stood with Gentilnesse.
(*e*) The cok, that orloge is of thorpes lyte

5. Show that the *Parlement of Foules* displays the leading features of Chaucerian vision-poems.

6. Explain: Massinesse, Citherea, The pecok, with his aungels fethers brighte.

EXAMINATION FOR HONOURS IN ENGLISH.

THIRD YEAR.

MILTON, *Areopagitica*: SIDNEY, *Apology for Poetry*.

SATURDAY, APRIL 24TH :—2 TO 5 P.M.

Examiners,..... { CHAS. E. MOYSE, B.A. / J. S. SMART, M.A.

1. By whom, and with what objects, was the licensing of books first begun? What use does Milton make of this in his argument?

2. Why did Milton call his book "*Areopagitica*"?

3. "Spenser, describing true temperance under the person of Guion, brings him in with his palmer, through the cave of Mammon and the bowr of earthly blisse."
What argument does Milton use this to illustrate?

4. Explain:—four nobles of Danegelt, Star Chamber, tunaging and poundaging.

5. What was the occasion of Sidney's writing the *Apology for Poetry*?

6. What is the origin and meaning of the word "Poet"?

7. "Poetry is more philosophical and more serious than history." From whom is this quoted? Explain it.

8. What does Sidney believe to be the end and purpose of poetry? Criticise his theory briefly.

9. What are Sidney's chief strictures on the English Drama of his time?

10. Explain the references to—
"Gorboduc."
"Seneca's style."
"Thebes written upon an old door."

EXAMINATIONS FOR HONOURS IN ENGLISH 1897.

THIRD YEAR.

ADDISON:—*Papers on the Imagination and Paradise Lost.*
DRYDEN:—*Annus Mirabilis, Absolom and Achitophel, Preface to Fables.*

SATURDAY, APRIL 24TH:—9 TO 12 A.M.

Examiners,..... { CHAS. E. MOYSE, B.A.
CHAS. W. COLBY, M.A., PH D.

(Answer the questions of sets A and B in different books.)

A.

1. Answer the following questions *very briefly*:

(*a*) What advantage have the pleasures of the imagination over those of the understanding?

(*b*) To what principle of pleasure would you refer motion?

(*c*) What "great modern discovery" does Addison couple with the name of Locke?

(*d*) On what general ground does Addison think a landscape seen in a camera obscura the prettiest he ever saw?

(*e*) What work in Architecture might be named as showing (*a*) greatness of bulk, (*b*) greatness of manner?

(*f*) How does Addison contrast Statuary and Music?

(*g*) In what manner should a poet take "as much pains in forming his imagination as a philosopher in cultivating his understanding"?

(*h*) How does Addison account for the literature of affliction causing pleasure?

(*i*) In what particular does Shakspere excel all other English writers?

(*j*) In what particular does Livy excel all other historians?

2. Answer the following questions *very briefly*:

(*a*) What is the meaning of the *greatness* of an action?

(*b*) What contrast is made between Ulysses and Satan?

(*c*) What does Addison think of the use of foreign idioms in Paradise Lost?

(*d*) What does Addison think of the use of technical terms in Paradise Lost?

(*e*) Why does Milton describe Paradise in such great detail?

(*f*) How does Uriel journey to the earth? What is Addison's criticism?

(*g*) How is Claudian referred to when Addison is speaking of the battle of the Angels?

(*h*) What is said about the golden compasses?

(*i*) How is Nature pictured at the Fall?

3. Take Moloch to show Milton's consistency in the delineation of character.

4. Outline, in a page, the various features of Puritanism which you discover in Paradise Lost.

B.

1. What has Dryden to say in his Preface to the Fables about Homer, Virgil, and Ovid?

2. Explain with fulness of detail the part which Monk and Rupert take in the *Annus Mirabilis*.

3. (*a*) Write a short essay on Dryden's use of satire in Absalom and Achitophel.

(*b*) Identify: Jebusites, Pharaoh, Solymean rout, "the well-hung Balaam and cold Caleb," "bull-faced Jonas."

(*c*) Reproduce as nearly as possible Dryden's characterization of Zimri.

4. (*a*) Give Dryden's observations on Milbourn, Blackmore, and Collier.

(*b*) In what strain does Dryden dilate on the rebuilding of London?

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

POPE: *Essay on Criticism; Essay on Man.*

THURSDAY, APRIL 1ST :—9 TO 12 A.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Briefly use opinions expressed in the *Essay on Criticism* as a commentary on the following statements:

(*a*) "You may abuse a tragedy though you cannot write one."—*Johnson.*

(*b*) A powerful memory and a powerful understanding may exist in the same person.

(*c*) There are bounds to poetic licence in modern poetry.

2. Explain the following allusions and give the context of each: Pierian spring; Alexandrine; Timotheus; bold Socinus.

3. Give the substance of the passage in the Third part of the *Essay on Criticism* which begins with a reference to Erasmus and ends with the consideration of the attitude of Britain towards foreign criticism. Write explanatory notes on the names which are mentioned.

4. Contrast the *Essay on Man* with *Paradise Lost.*

5. Give the substance of Pope's treatment of the general questions in which reference is made to:

(*a*) "A Borgia, or a Cataline."
(*b*) "Fruits, ungrateful to the planter's care."
(*c*) "De Moivre."
(*d*) "Good Aurelius."

Make notes on the names you have written.

6. Show that Pope in the *Essay on Man* supports important arguments by appealing to the animal world.

EXAMINATION FOR B.A. HONOURS IN ENGLISH.

ANGLO-SAXON

MONDAY, APRIL 5TH :—9 TO 12 A.M.

Examiner,.....CHAS. E. MOYSE, B.A.

Translate :—

(*a*)

Niht-weorce gefeh,
ellen-mærthum; hæfde East-Denum
Geat-mecga leod gilp gelæsted,
swylce oncythe ealle gebètte
inwid-sorge, the hie ær drugon

and for threa-nydum tholian scoldon,
torn unlytel. That wæs tâcen sweotol,
syththan hilde-deor hond âlegde,
earm and eaxle (thær wæs eal geador
Grendles grâpe) under geapne hrôf.

(b) Sprac thâ ides Scyldinga:
"Onfoh thissum fulle, freo-dryhten min,
"sinces brytta; thu on sælum wes,
"gold-wine gumena, and to Geatum sprec
"mildum wordum! Swâ sceal man don.
"Beo with Geatas glæd, geofena gemyndig
"nean and feorran thu nu *frithu* hafast.
"Me man sægde, that thu the for sunu wolde
"here-rinc habban. Heorot is gefælsod,
"beah-sele beorhta; bruc thenden thu mote
"manigra mêda and thinum magum læf
"folc and rice, thonne thu forth scyle
"Metod-sceaft seon Ic minne can
"glædne Hrôothulf, thæt he thâ geogothe wile
"ârum healdan, gyf thu ær thonne he,
"wine Scildinga, worold oflætest;
"wêne ic, that he mid gode gyldan wille
"uncran eaferan, gif he thæt eal gemon,
"hwæt wit to willan and to worth-myndum
"umbor wesendum ær ârna gefremedon."

(c) Hûru thæt onhohsnode Heminges mæg;
ealo drincende other sædan,
thæt hio leod-bealewa læs gefremede,
inwit-nitha, syththan ærest wearth
gyfen gold-hroden geongum cempan,
athelum diore, syththan hio Offan flet
ofer fealone flod be fæder lâre
sithe gesohte, thær hio syththan wel
im gum-stole, gode mære,
lif-gesceafta lifigende breac,
hiold heah-lufan wio haletha brego,
ealles mon-cynnes mine gefræge
thone sêlestan bi sæm tweonum
eormen-cynnes; fortham Offa wæs
geofum and gûthum gâr-cêne man,
wide geweorthod; wisdome heold
êthel sinne, thonon Eomær woc
halethum to helpe, Heminges mæg,
nefa Gârmundes, nitha craftig.

(*d*). Tha se gæst ongan glêdum spiwan,
beorht hofu bærnan; bryne-leoma stôd
eldum on andan; no thær âht cwices
lath lyft-floga læfan wolde.
Wæs thæs wyrmes wig wide gesyne,
nearo-fâges nith nean and feorran,
hû se gûth-sceatha Geata leode
hatode and hynde: hord eft gesceat,
dryht-sele dyrnne ær dages hwile.
Hæfde land-wara lige befangen,
bæle and bronde; beorges getrûwode,
wiges and wealles: him seo wên geleah.

(*e*) Tha ic snude gefrægn sunu Wihstânes
æfter word-cwydum wundum dryhtne
hyran heatho-siocum, bring-net beran,
brogdne beadu-sercean under beorges hrôf.
Geseah thâ sige-hrêthig, thâ he bi sesse geong,
mago-thegn môdig mâththum-sigla fela,
gold glitinian grunde getenge,
wundur on wealle and thæs wyrmes denn,
ealdes uht-flogan, orcas stondan,
fyrn-manna fatu feormend-lease,
hyrstum behrorene; thær wæs helm monig,
eald and ômig, earm-beaga fela,
searwum gasæled. Sinc eathe mæg,
gold on grunde, gumena cynnes
gehwone ofer-higian, hyde se the wylle!
Swylce he siomian geseah segn eall-gylden
heah ofer horde, hond-wundra mæst,
gelocen leotho-cræftum: of tham leoma stôd,
thæt he thone grund-wong ongitan meahte,
wræte giond-wlitan. Næs thæs wyrmes thær
onsyn ænig, ac hyne ecg fornam.

(Translation at sight.)

(*a*) Syththan he undergeat thet eall folc him to gebogen wæs, tha bead he thet man sceolde his here metian and horsian. And he tha gewende syththan suthweard mid fulre fyrde, and betæhte his scipa and tha gislas Cnute his sunu. Wendon tha thanon eastward to Lundene, and mycel his folces adranc on Temese, fortham hi nanre brycge ne cepton. Tha he to thære byrig com, tha nolde seo burhwaru abugan ac heoldan mid fullan wige ongean, forthan thær wæs inne se cyning Æthelred, and Thurkil mid him. Tha wende Swegen cyning thanon to Wealingaford, and swa ofer Temese westweard to Bathon, and sæt thær mid his fyrde,

and com Æthelmer ealdorman thider, and tha weasternan thægnas mid him, and bugon ealle to Swegene, and gislodon. Tha he eall thus gefaren heafde, wende tha northweard to his scipon, and eall theodscipe hine heafde for fullne cyning, and seo burhwaru æfter tham on Lundene beah and gislode, fortham hi ondreddon thet he hi fordon wolde. Bead tha Swegen fullgild and metsunga to his here thone winter, and Thurcyl bead thet ilce to tham here the læg on Grenawic, and buton tham hi hergodan swa oft swa hi woldon. (*A.S.C.*)

(*b*) Æghwar we gelyfath thæt Godes andweardnes sy and gesihth, and his eagan behealdath ægther ge tha godan ge tha yfelan; theah swithost we thæs butan ælcere tweonunge gelyfen, thonne we æt Godes weorce wunıath. Forthy thonne syn we a gemyndige, thæs the se witiga thus cwæth: "Theowiath eoweran dribtne mid ege;" and eft: "Singath wis lice," and: "on engla gesihthe ic singe the." Eornostlice uton bescawian hu we wunien on Godes gesyhthe and on his engla; and thonne swa standan æt tham sealmsange, thæt ure mod gethwærige mid thæs muthes clypunge. (*Benedictine Rule.*)

(*c*) Gewurthe thin willa, swa thu, waldend, eart,
ece geopenod geond ealle world
and thu the silf eart sothfæst dema,
rice rædbora geond rumne grund.
Swa thin heahsetl is heah and mære,
fæger and wurthlic, swa thin fæder worhte,
æthele and ece, thar thu on sittest
on sinre swithran healf. Thu eart sunu and fæder
ana ægther: swa is thin æthele gecynd
micclum gemærsod and thu monegum helpst,
ealra cyninga thrym, clypast ofer ealle:
bith thin wuldorword wide gebyred,
thonne thu thine fyrde fægere geblissast,
sylest miht and mund micelum herige;
and the thanciath thusenda fela,
eal engla thrym anre stæfne. (*Pater Noster.*)

B.A. EXAMINATION 1897.

THE LEADING POETS OF THE NINETEENTH CENTURY.

WEDNESDAY, APRIL 7TH:—2 TO 5 P.M.

Examiner,..... CHAS. E. MOYSE, B.A.

A.

1. Describe Wordsworth's school-life. (Limit your answer to one page.)

2. What was to be the general character of the contributions of Wordsworth and Coleridge to the *Lyrical Ballads*? What suggestions did Wordsworth make when he and Coleridge were discussing the subject of the *Ancient Mariner*? Briefly indicate the plot and the general character of *Remorse*.

3. To what does Scott ascribe the awakening of interest in German literature in Edinburgh? Name his ballads translated or imitated from the German? What was the germ of the *Lay of the Last Minstrel?* Why is Wat of Harden introduced into the poem? To what feature of Scott's poetry has Ruskin drawn attention? Give the substance of his remarks. What objection is made to the character of Marmion?

4. Show from Byron's poems that Scotch scenery made a lasting impression on him. Is Macaulay's criticism of Byron's characters sound? Give a brief outline of *two* of Byron's Oriental romances.

5. Give, in about a page, an outline of *Endymion*. Notice (*a*) the verse, (*b*) the vocabulary of *Endymion*.

B.

(Answer questions 3 and 7 and any three of the remainder.)

1. What poems of Wordsworth refer to his father's garden at Cockermouth? Quote a line or two from each. Give the substance of the passage referring to the peak of Wetherlam, and point out its significance.

2. Display the temper of Coleridge's *Ode to France*, and quote as you do so.

3. Tell the story of *The Old Woman of Berkeley*.

4. *Hyperion:* Describe (*a*) Saturn's lair and (*b*) the fallen Titans.

5. Explain the meaning of *Alastor*, and trace the wanderings of the poet.

6. Describe the chapel and its worshippers in *Christmas Eve*.

7. State precisely from what part of the *Princess*, *Manfred* and *Adonais* each of the following extracts is taken:—

(*a*) O Swallow, Swallow, flying, flying South.
(*b*) The seal was Cupid bent above a scroll.
(*c*) Man is the hunter; woman is the game.
(*d*) She fulmined out her scorn of laws Salique.
(*e*) Around his waist are forests braced.
(*f*) Hail to our Master! Prince of Earth and Air!
(*g*) A noble wreck in ruinous perfection.
(*h*) Chatterton
Rose pale.
(*i*) Another clipt his profuse locks.
(*j*) A pardlike spirit beautiful and swift.

EXAMINATION FOR B.A. HONOURS IN ENGLISH.

TENNYSON: *In Memoriam*.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Explain the following allusions in *In Memoriam*:—

(*a*) To dance with death

(*b*) Dark house.

(*c*) I, falling on his faithful heart,
Would breathing thro' his lips impart
The life that almost dies in me.

(*d*) And those wild eyes that watch the wave
In roaring round the coral reef

(*e*) God shut the doorways of his head.

(*f*) Thrice again
The red fool-fury of the Seine

2. Explain the allegory of Section C III. (*Methought I dwelt within a all.*)

3. How does Tennyson answer the following statements:—

(*a*) "Loss is common to the race."

(*b*) "The cheeks droop in; the body bows."

(*c*) "Thou pratest here where thou art least."

(*d*) "So careful of the type."

4. State briefly but pointedly how Tennyson deals with the following questions:—

(*a*) The retention of the memory of earthly things in the future world.

(*b*) The function of doubt.

5. Trace Tennyson's thought through the portion of the poem which refers to the ship.

6. Describe Tennyson's visit to Cambridge, and show its bearing on the development of the poem.

7. Write an Essay on striking features of the poetry of *In Memoriam*, and let your quotations be brief.

EXAMINATION FOR HONORS IN ENGLISH AND HISTORY.

THIRD AND FOURTH YEARS.

LECTURES ON THE FRENCH REVOLUTION, 1789-92.

SATURDAY, APRIL 10TH :—MORNING, 9 TO 12.

Examiner, ... CHARLES W. COLBY, M.A., PH.D.

1. Develop the progress of Mirabeau's political career from its beginning to his death. Seek to emphasize his personality, and to connect him with his chief associates and opponents as well as with events and measures.

2. Indicate the importance of (*a*) De Brienne's quarrel with the Parliament of Paris; (*b*) The action of Dauphiné in 1788.

3. What occurred at Versailles and Paris between the 11th and 17th of July, 1789?

4. Investigate the origin and fortunes of the *assignat*.

5. Outline the main tenets of the constitutional party of 1791-92, and trace the decline of its influence.

6. Illustrate the attitude towards the Revolution of (*a*) The Revolution Society; (*b*) Leopold II.; (*c*) William Pitt.

7. Make short but incisive notes on: Gustavus III.; "Séance Royale;" "O Richard! O mon roi!" "Grandison-Cromwell;" the Nancy mutiny; Clootz; Merlin de Thionville; Comte de Narbonne; "Ami du Peuple"; "Comité Autrichien;" the "sections" of St. Antoine and St. Marceau; Oczakow.

B. A. EXAMINATION FOR HONORS IN ENGLISH.

Lycidas; Adonais; Thyrsis.

THURSDAY, APRIL 8TH :—2 TO 5 P.M.

Examiners..... { CHAS. E. MOYSE, B.A. / J. S. SMART, M.A.

1. What do you gather from *Lycidas* concerning the life and fate of Edward King? Whence was pastoral poetry directly introduced into our literature?

2. What thoughts common to the monody do you find in *Lycidas*?

3. Criticise the following statements of Johnson:

(*a*) "The shepherd is now a feeder of sheep, and afterwards a superintendent of a Christian flock—an approach to impiety of which, however, I believe the writer not to have been conscious."

(*b*) "No man could have fancied that he read *Lycidas* with pleasure, had he not known the author."

4. Write explanatory notes on: myrtles *brown;* the muse herself that Orpheus bore; Smooth-sliding Mincius; Sage Hippotades; The pilot of the Galilean lake; *blind* mouths; *scrannel* pipes; that two-handed engine; swart-star; the unexpressive nuptial song.

5. Make a few notes on the title *Adonais.*

6. Give the chief features of Shelley's description of himself in *Adonais.*

7. Trace the development of Shelley's thought in the course of *Adonais.* (Confine your answer to one page.)

8. Who was the "Thyrsis" of Arnold's poem? What do you know about his life and works?

9. What was the story of the Scholar-Gipsy?

10. Explain the following:
(*a*) The signal elm, that looks on Ilsley Downs.
(*b*) For Time, not Corydon, hath conquer'd thee.
(*c*) The Dorian pipe.

11. Quote briefly from, or refer to, passages that mark *Adonais* as the emotional monody of our literature.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

TENNYSON: *Idylls of the King.*

SATURDAY, APRIL 24TH:—MORNING, 9.

Examiner,..... ....CHAS. E. MOYSE, B.A.

1. *Coming of Arthur.* Explain the meaning of the heathen host: And there be those who deem him more than man; Flame-colour, vert and azure; cross-hilted sword; the shape thereof A dragon winged; a ninth one; "Rain, rain and sun."

2. *Gareth and Lynette.*—Explain the meaning of: A royal eagle; And drops of water flowed from either hand; And therefore built for ever; Lyonors; three loops. What is the color of the Evening Star in Tennyson? of the corresponding Knight in Malory?

Describe the combat between Gareth and the Evening Star.

3. *The Marriage of Geraint.* Why does Geraint leave the court? What is the reason given in the Mabinogion? The dwarf and Geraint: is there anything new in Tennyson's treatment? Write a few lines on Enid's song, showing its significance. Is there any blending of persons separated in the romance?

4. *Geraint and Enid.* In a single paragraph of about half a page give an outline of *Geraint and Enid*, and on the left-hand page of the book jot down differences found in the source or sources which Tennyson used. Write an explanatory note on

(*a*) that maiden in the tale
Whom Gwydion made by glamour out of flowers.

(*b*) giant tower.

5. *Balin and Balan.* Why is *Balin and Balan* inserted in the series? Why does Tennyson invent Arthur's overthrow of the brothers? In what way has Tennyson modified the romance account of Garlon's death? What is Pellam intended to show?

6. Write on the various Merlins of chronicle and romance.

7. *Lancelot and Elaine.* Where is Astolat? Mention two striking episodes in *Lancelot and Elaine* which are Tennyson's own. Give in half a page an outline of the longer.

8. *Holy Grail.* What is the Welsh name of Percival? On what ground is it held that the story of Percival in its earliest form is independent of the Grail? State the exact source that Tennyson used.

Who had talked to the monk about the Grail before Percival came? Disclose the allegory in the account of (*a*) Arthur's Hall, and (*b*) Sir Galahad's departure to the Holy City.

9. Use the remaining Idylls to show the gradual decline of Arthur's kingdom. (Limit your answer to two pages.)

10. Use the same set of Idylls as illustrative of striking features of Tennyson's poetry.

EXAMINATION FOR B.A. HONOURS IN ENGLISH.

More, *Utopia*; Matthew Arnold, *Essays in Criticism* (*Second Series*); Browning, *Christmas Eve and Easter Day*.

Friday, April 23rd:—Morning, 9 to 12.

Examiners, ... { Charles E. Moyse, B.A. / J. S. Smart, M.A.

(Answer the questions of sets A., B. and C. in separate books.)

A.

1. Where did More meet Hythlodaye? Briefly describe Hythlodaye's appearance and his attainments.

2. Write on the Polylcrites.

3. State, without any detail whatever, what devices might be resorted to by a king anxious to raise money.

4. Answer the following questions *very* briefly :

(*a*) Why is there no property in Utopia ?
(*b*) In what way is debt paid ?
(*c*) Who wear gold, and in what form ?
(*d*) What branches of learning are studied by the Utopians ? In which branch are they expert ?
(*e*) What are the two chief articles of the Theological creed of the Utopians ?
(*f*) How comes it that the Utopians learn Greek quickly ?
(*g*) How is incurable disease regarded ?
(*h*) What insignia has the Prince ? The Bishop ?
(*i*) How are lawyers dealt with by the Utopians ?
(*j*) How do the Utopians prefer to wage war ?
(*k*) What does a soldier's family do when he fights ?
(*l*) What do the Utopians do with their dead ?
(*m*) Why are the churches somewhat dim ?
(*n* What are the views of the Utopians, concerning images of Saints ?
(*o*) What is the name of the God of the Utopians.

B.

1. State Goethe's criticism of Byron.

2. What, in Arnold's opinion, gives Chaucer his superiority over French romantic poetry ?

3. How does he rank the English poets of this century ?

4. How does he explain the smallness of Gray's poetic production

C.

1. Explain the following allusions in Browning's poem :

(*a*) A carer for none of it, a *Gallio*.
(*b*) A *Saint John's* candlestick.
(*c*) When A got leave an ox to be
No camel (quoth the Jews) like G.
(*d*) A *Grignon* with the Regent's crest.
(*e*) *Fourier's* scheme.
(*f*) Buonarottri.

2. Give an outline of the scene at St. Peter's.

3. Describe the Judgment Day.

INTERMEDIATE EXAMINATION.

MODERN HISTORY FOR AFFILIATED COLLEGES.

LODGE'S "MODERN EUROPE," 1789-1878.

THURSDAY, APRIL 1ST:—MORNING, 9 to 12.

Examiners, ... { D. MACRAE, D.D. / C. W. COLBY, M.A., PH.D.

Answer any seven of the following questions:—

1. Outline the state of France at the beginning of the reign of Louis XVI, with regard: (*a*) to the nobles, and other class distinctions; (*b*) to the condition of the peasantry; (*c*) to the institutions of government; (*d*) to religion and literature.

2. Sketch the career of Napoleon, and his aims, especially in relation to Great Britain.

3. How often has a republic been established in France? Briefly indicate the events leading to each, and the respective dates.

4. What permanent benefits, if any, accrued from the French revolution of 1789?

5. What kingdom, once powerful, has been obliterated from the map of Europe? Relate some of the causes leading to its destruction as a separate power.

6. What led to the Crimean war? And what, if any, were its permanent results?

7. The Seven Weeks' war, to what changes did it lead: (*a*) in Germany; (*b*) in Italy; (*c*) in France?

8. "Peace with honour." With whose name is that phrase associated? And how far have his expectations been realized?

INTERMEDIATE EXAMINATIONS.

LECTURES ON THE POLITICAL HISTORY OF EUROPE, 1789-1878

WEDNESDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner, ...CHARLES W. COLBY, M.A., PH.D.

1. Write a short essay on the French Revolution considered as a rebellion against (*a*) Feudalism, (*b*) French Feudalism.

2. Describe clearly the military successes of France under Napoleonic leadership in (*a*) 1796-97, (*b*) 1805-07.

3. Give a detailed enumeration of the popular risings which took place in Paris between 1789-1871.

4. Trace the vicissitudes of the Hapsburgs and of Austria, 1272-1866.

5. Write brief sketches of:

(*a*) Stein;
(*b*) Bismarck.

6. (*a*) Outline the party divisions which existed among Italian patriots, 1831-46.

(*b*) How was the Eastern Question brought before the attention of France and western Europe in the reign of Louis Philippe?

7. Make short but lucid notes on: Desmoulins; Bailly; Hoche; Manteuffel; Ciro Menotti; *pacte de famine*; Campo Formio; Berlin Decree; Novara; Treaty of Frankfort.

SESSIONAL EXAMINATIONS.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH, MODERN LANGUAGES AND HISTORY.

HISTORY OF THE MIDDLE AGES, I.

MONDAY, APRIL 19TH:—9 TO 12 A.M.

Examiner,.....CHARLES W. COLBY, M.A., PH.D.

1. 378-911. During the two centuries immediately following the first of these dates the provinces of the Western Empire were attacked from without. Then the nascent races of modern Europe were in their turn attacked. Give as complete a catalogue as you can of the nations or tribes who acted on the offensive throughout the whole period indicated. Name their leaders wherever possible; the resisting forces with leaders; and mention the issue of each conflict. Present your answer in tabulated form, taking care to enumerate battles and their dates.

2. Illustrate the national characteristics of the Germans beginning with their primitive condition and ending with the age of Charles Martel.

3. (*a*) Mention the chief stages by which the Roman law became a complete *Corpus Juris Civilis*.

(*b*) What is the special importance of Roman law in the relations between provincials and Germans during the inroads period?

4. Write, with some attention to literary form, a short character sketch of Charlemagne.

5. Set forth the attitude of Charles Martel, Pippin The Short and Charlemagne towards the Church.

6. Describe the breaking up of the Frankish Empire.

7. Cite two, or at most three, precise facts concerning, St. Severinus; Virgil in the Middle Ages; the Bishop Epiphanius of Pavia; John of Cappadocia; Eutharic; *Apocrysarius*; Margus; Spalato; Cassiodorus; Monophysite.

SESSIONAL EXAMINATIONS.

THIRD AND FOURTH YEAR HONOURS IN ENGLISH, MODERN LANGUAGE AND HISTORY.

HISTORY OF THE MIDDLE AGES, II.

WEDNESDAY, APRIL 21ST:—9 TO 12 A.M.

Examiner,.....CHAS. W. COLBY, M.A., PH.D.

1. Notice the leading fluctuations of papal power and influence between the pontificate of Nicholas I. and that of Innocent III.

2. Delineate the personality of Mohammed, and examine the doctrinal basis of the religion which he founded.

3. (*a*) Outline the development of Christian Kingdoms in Spain to 1212.

(*b*) What effect upon national character was produced by the long crusade of Spain against the Moslems?

(*c*) Give an epitome of St. Dominic's career.

4. What light do the *Consuetudines Cluniacenses* throw upon the success and usefulness of Cluny?

5. The "reign" of Stephen. Adduce facts to justify the quotation marks used.

6. Follow out the political fortunes of the German stem duchies.

7. Comment briefly upon: Pataria, Stephen Boileau, Richard, Abbot of St. Albans, Manfred's repentance, Subiaco, DuMolay, *Fioretti*, Lullius, *Opus Majus*, Almansor.

MENTAL AND MORAL PHILOSOPHY.

INTERMEDIATE EXAMINATION.

FORMAL LOGIC.

WEDNESDAY, 14TH APRIL :—MORNING, 9 TO 12.

Examiners,..... ..... { J. CLARK MURRAY, LL.D. / P. T. LAFLEUR, M.A.

(N.B.—Question 9 must be attempted by every candidate.)

1. In how far is the science of Formal Logic dependent on language?

2. Give the logical characteristics of the following terms: Library, scientia scientiarum, franchise, the Lion of Judah, intuition, apprehension.

3. Write short notes on: The Law of Excluded Middle, the relation between Denotation and Connotation, terms ambiguous from accidental identity in sound and spelling. Give illustration, where it is necessary.

4. Write out the rules of Logical Definition; and give an *original* example of the violation of any one.

5. Give the converse and the contradictory of each of the following propositions :—

Every mistake is not culpable.
Silence is golden.
No aliens are eligible.
Happy is he who bears his burdens lightly.

6. What is the Figure of a Syllogism? Why does a syllogism in the Second Figure admit of none but negative conclusions?

7. Construct syllogisms in Darapti and Camenes (with sentences, *not* with symbols), and reduce them.

8. Explain and illustrate: the fallacy of denying the antecedent, post hoc ergo propter hoc, simple begging of the question, fallacy of accident. (*Original* illustration preferred.)

9. The candidate is required to examine the following specimens of reasoning or other logical process, and to determine in every case the validity or the non-validity of the example, with careful explanation of the grounds for the conclusions arrived at :—

(*a*) Man is an animal that makes his own tools.
—*Franklin.*

(*b*) Q. What do you mean by respectable?
A. He always kept a gig. (Thurtell's Trial.)

Thus, it has been said, does society naturally divide itself into four classes: Noblemen, gentlemen, gigmen, and men.

Carlyle.—Essay on Boswell's Johnson.

(*c*) That which causes a balance of good is right, according to utilitarians; and therefore persecution may sometimes be right.

—*Leslie Stephen.*

(*d*) Whatever is expedient is conformable to nature.
Whatever is conformable to nature is not hurtful to society.
Therefore, whatever is hurtful to society is not expedient.

(*e*) *Soc.*—Truth and sincerity are very precious things, are they not?

Alc.—Yes, truly, I think of all things the most precious.

Soc.—And do we not generally keep our most precious gifts for our friends alone?

Alc.—No doubt we do so.

Soc.—You will not deny, then, that truth and sincerity should be given to our friends?

Alc.—Certainly, we ought to give them to those we love.

Soc.—Ought we not also to deny them to our enemies?

Alc.—It certainly seems so, from the argument; but I like not this conclusion.

THIRD YEAR EXAMINATIONS.

MURRAY'S HANDBOOK OF PSYCHOLOGY, BOOK II., PART II.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Answer only eight questions.

1. Describe the order in which the different kinds of cognition are probably evolved.

2. Prove that neither magnitude nor figure nor distance can be perceived by sight alone.

3. Explain *either* the principle of the stereoscope *or* the fact that the moon on the horizon appears larger than when high in the heavens.

4. Explain the visual perception of direction.

5. Show that abstraction is the counterpart of attention, and is identical with analysis; *or* explain why concrete thought is more natural than abstract.

6. Show that there is a general element in every perception of an individual, and an individual element in every general conception.

7. Why is it difficult for children born deaf to abstract and generalize?

8. Explain the relation of Logic and Psychology.

9. Distinguish the different ideals of the mind.

10. Explain the peculiar limitation to which all the visual arts are subject, and the distinctive characteristic of each.

11. Write a note on dreaming *or* on hypnotism.

12. Explain what is meant by the Relativity of Knowledge, and its bearing on Agnosticism.

THIRD YEAR HONOURS IN MENTAL AND MORAL PHILOSOPHY.

GREEK PHILOSOPHY AND PLATO'S THEÆTETUS.

TUESDAY, MARCH 30TH :—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Describe the condition of the Greek Colonies in which philosophical speculation originated.

2. Compare the distinctive doctrine of Herakleitos with that of the Eleatics.

3. Compare the doctrines of Empedokles, of Anaxagoras, and of Demokritos with regard to the primary elements of all things.

4. Give some account of the teaching *either* of Sokrates *or* of the Sophists.

5. Sketch *either* the Dialectic of Plato *or* the Ethics of Aristotle.

6. Sketch *either* the Ethics of the Stoical School *or* the Canonic and Physics of the Epicureans.

7. Give a brief outline of the Theætetus.

THIRD YEAR HONOURS IN MENTAL AND MORAL PHILOSOPHY.

JAMES' PRINCIPLES OF PSYCHOLOGY, AND FRASER'S SELECTIONS FROM BERKELEY.

THURSDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. State what are the constituents of the Self, and describe any one of them; *or* describe some of the facts connected with alternating selves.

2. Discuss the question, To how many things can we attend at once ? *or* explain the difference between passive and voluntary attention.

3. Define conception, and show that conceptions are unchangeable ; *or* write a note on the measurement of discriminative sensibility.

4. Explain the law of association named Redintegration, *or* discuss the question whether Similarity is an elementary law of association.

5. State Berkeley's doctrine in regard to abstract ideas, with James' criticism.

6. Point out the connection between Berkeley's doctrine regarding abstract ideas and his theory in regard to material substance.

7. Sketch the leading doctrines *either* of "The Principles of Human Knowledge," *or* of "An Essay towards a New Theory of Vision."

B.A. EXAMINATIONS.

MURRAY'S INTRODUCTION TO ETHICS, BOOK II.

FRIDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiner,..... .....J. CLARK MURRAY, LL.D.

Answer only eight questions.

1. State the problem of Ethics Proper, and distinguish the two lines of speculation in which a solution has been sought.

2. Give an outline of Utilitarianism.

3. State the various methods which seek to reconcile Utilitarianism with self-sacrifice, and discuss any one of these.

4. Give an account *either* of ancient Stoicism *or* of one of the English Moralists.

5. Distinguish (*a*) Legal and Moral, (*b*) Social and Personal, (*c*) Determinate and Indeterminate, Obligations.

6. Explain the sense in which society may be called an organism, *or* explain the difference between the three forms of society with which man is essentially connected.

7. Discuss the position of the labourer in reference to the right of freedom, *or* explain the Law of Supply and Demand in its moral aspect.

8. Distinguish *either* the logical and the historical origin of real rights, *or* the different systems of distributing wealth.

9. "When men are friends, there is no need of justice" (Aristotle). Explain.

10. Distinguish Virtue from Duty, and give Plato's classification of the Virtues.

11. Explain the relation of the moral and the religious consciousness.

12. Describe Virtue as an emotional habit *either* in its negative *or* in its positive aspects.

B. A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

ZELLER'S STOICS, EPICUREANS AND SCEPTICS.

THURSDAY, MARCH 25TH :—AFTERNOON, 2 to 4.

Examiner,.....J. CLARK MURRAY, LL.D.

Write an essay on any one of three schools,—the Stoics, the Epicureans, or the Sceptics,—omitting details that are merely biographical

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B. A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

SPINOZA'S ETHICS.

MONDAY, MARCH 29TH :—MORNING, 9 to 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Give a brief account of the relation of Spinoza to Descartes, to Malebranche, and to Geulincx.

2. State and explain the definitions of Substance, Attribute and Mode.

3. What is meant by the proposition, that "Deus est omnium rerum causa immanens, non vero transiens" (I. 18)?

4. Explain Spinoza's doctrine of causality, and his distinction of adequate and inadequate causes.

5. "Ordo et connexio idearum idem est ac ordo et connexio rerum" (II. 7). Discuss how far Spinoza's other teachings are consistent with this proposition.

6. What does Spinoza understand by Perfection, by Good and Evil?

7. Explain the classification of cognitions and of primitive emotions (affectus).

8. Explain the relation of action, virtue, the third kind of knowledge, and the intellectual love of God.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

HISTORY OF MODERN PHILOSOPHY.

WEDNESDAY, MARCH 31ST:—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D. / P. T. LAFLEUR, M.A.

Write answers to A and B in separate books.

A.

1. Describe the revolt against Aristotelianism at the dawn of modern philosophy.

2. Sketch in outline the philosophy *either* of Descartes *or* of Leibnitz.

3. Give an account *either* of the ethical and political teachings of Hobbes *or* of Locke's Essay concerning Human Understanding.

4. Explain Hume's analysis of the ideas of Substance and Cause, and indicate the influence of the analysis on philosophical and theological speculation.

B.

1. Contrast the *general* character of English philosophical thought from Hartley to Coleridge with that of speculative philosophy in any continental country during the same period; and note some of the principal causes which may be held to account for the difference.

2. Describe the attitude of Burke towards the political and social problems of his time.

3. Give some account of Paley's system; and state in what respect his Utilitarianism differs from that of Bentham.

4. What may be said to have been the influence of the speculations of Coleridge on the thought of his contemporaries and on the immediately succeeding generation in England? Support your statements with examples in verification.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

THE PHILOSOPHY OF KANT.

MONDAY, APRIL 5TH :—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

Answer only six questions.

1. Define Æsthetic, Logic, Analytic, Dialectic, as used by Kant.

2. Explain the question in which Kant sums up the problem of Pure Reason.

3. Give the table of the Categories, explaining the principle on which it is founded.

4. Give an outline of the Transcendental Deduction of the Categories, *or* explain the Schematism of the Pure Understanding.

5. Explain *either* the third *or* the fourth class of Principles of the Pure Understanding.

6. What are the Ideas of Pure Reason, and what is the process by which they are formed?

7. State the Antinomies of Pure Reason, and indicate how each is solved; *or* state the arguments for the existence of the Ideal of Pure Reason, and give the substance of Kant's critique of each.

8. Explain the Principle *or* the Concept *or* the Motive of Pure Practical Reason.

9. Explain the Antinomy of Pure Practical Reason, and its solution.

10. Give an outline of the Analytic and the Dialectic of Teleological Judgment.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

WATSON'S OUTLINE OF PHILOSOPHY

MONDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Answer only six questions.

1. Explain the relation of Science and Philosophy.

2. How does Mill explain (*a*) the exactness and (*b*) the necessity of mathematics, (*c*) causal connection in nature?

3. State Comte's law of the stages of human development.

4. "Knowledge is never of the mere particular." Explain.

5. Criticise *either* (*a*) Mill's view of Geometry, *or* (*b*) his view of Arithmetic, *or* (*c*) his definition of Cause.

6. Criticise the application of Darwinism to explain knowledge and morality.

7. State the five propositions, maintained by Mr. Spencer, with regard to the relation of subject and object. Give Watson's critique.

8. Examine the Stoical opposition of reason and inclination.

9. State Kant's three formulae of the Categorical Imperative with Watson's remarks on each.

10. Explain Kant's two postulates of Pure Practical Reason, and discuss the question whether they are legitimate.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MAINE'S ANCIENT LAW.

SATURDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Answer only six questions.

1. Describe the jural condition of Society before the formation of codes.

2. By what agencies is Law adapted to the progress of society?

3. What was the *Jus Gentium* originally, and how did it come to be identified with the Law of Nature?

4. Trace the later developments of the doctrine of a Law of Nature.

5. (*a*) What was the unit of primitive society? (*b*) Illustrate its influence on jural organization.

6. Sketch the origin of property with special reference to the theory which traces it to a primitive occupancy of *res nullius*.

7. Sketch the early history *either* of testamentary succession *or* of contract.

8. Trace the differentiation of Crime from Wrong and from Sin.

9. Point out the influence of Roman Jurisprudence upon Latin Theology.

B.A. EXAMINATIONS IN MENTAL AND MORAL PHILOSOPHY.

ARISTOTLE'S NICOMACHEAN ETHICS.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Answer only six questions.

1. What is the Good, and of what science is it the end?

2. Explain Aristotle's classification of Virtues.

3. Illustrate by two examples his definition of Ethical Virtue.

4. In what sense does Justice come under this definition?

5. "In justice all virtue is comprehended." "When men are friends, there is no need of justice; but though they be just, they need friendship." Compare and reconcile these two statements.

6. Discuss any two of the questions:—(*a*) Can a man be unjust to himself? (*b*) Is it worse to inflict or to suffer injustice? (*c*) Is intemperance in anger worse than intemperance in appetite?

7. Define the different Dianoetic Virtues.

8. Distinguish the different kinds of friendship and of self-love.

9. Distinguish the different political constitutions with their several corruptions.

10. Give Aristotle's summation of what constitutes happiness.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

JAMES' PRINCIPLES OF PSYCHOLOGY, VOL. II.

SATURDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

Answer only six questions.

1. Describe Hering's experiments to explain the effect of contrast.

2. Discuss the common theory, as stated by Bain, of the neural process in imagination.

3. Sketch James' theory of the perception of space, *or* the theory of "local signs."

4. Give a psychological analysis of belief.

5. Explain the relative importance of association by contiguity, and association by similarity.

6. Discuss the question, whether instincts are always blind or invariable.

7. State James' theory of emotion with some of the facts which he adduces in its support.

8. What is ideo-motor action? *or* what is the essential feature of willing?

9. State Spencer's Empiricism.

10. Examine it.

FRENCH.

SESSIONAL EXAMINATION.

PREMIÈRE ANNÉE.

Le 13 Avril.

Examinateurs, ... { M. Ingres. J. L. Morin.

I.

A. Pour les élèves de McGill et de Morrin.

Reproduire par écrit le morceau suivant que l'examinateur voudra bien lire deux fois, à haute voix. et dont il recueillera les reproductions avant de distribuer le présent papier.

ESOPE.

Le précepte favori d'Esope était que "l'oisiveté est la mère de tous les vices; aussi tenait-il à exercer une profession qui le rendît utile aux autres et à lui-même. En conséquence, il avait accepté la place d'intendant chez un riche marchand d'huiles nommé Chrysès. Dans cet emploi, il sut si bien gérer les affaires et conduire la maison, qu'il décupla la fortune du maître. Les concurrents de Chrysès manifestaient à tout propos leur jalousie et riaient des difformités du Phrygien; ils se moquèrent de ils bien plus fort quand, à l'encontre d'eux, qui avaient entouré de bassins d'eau leurs magasins d'huiles, par précaution pour le cas d'incendie, il le virent creuser des fosses profondes et en faire relever la terre de ci et de là en bordures très-hautes." "Rira bien qui rira le dernier," se dit Esope.

Un violent incendie ayant éclaté dans Samos, le feu trouva un aliment

naturel dans les magasins d'huiles. Les marchands vidèrent tous leurs réservoirs... Hélas! plus ils jetaient d'eau, plus le foyer grandissait, plus il s'élargissait, plus le brasier devenait ardent.

" Vous ne savez donc pas ce que c'est que de jeter l'huile sur le feu, et l'eau sur l'huile ? " leur criait Esope.

Et, faisant recouvrir à la hâte les magasins de Chrysès avec la terre tirée des fosses, il les préserva de l'atteinte des flammes.

C'est alors que Chrysès resta le seul marchand d'huiles de Samos, ses concurrents ayant été ruinés par le feu. Cette fois, ce fut en pleurant que ceux qui s'étaient moqués rendirent justice au bon sens d'Esope.

Chrysès, ravi d'enthousiasme, pensa étouffer son intendant dans ses embrassements réitérés.

Le Phrygien, toujours calme, se contenta de lui réciter une de ses fables. C'était sa réponse favorite à toutes choses. Cette habitude, que chacun connaissait, lui avait à la fin attiré une grande célébrité, et l'on citait partout le nom d'Esope, le conteur d'apologues.

Chrysès goûta médiocrement, j'imagine, les vers de son intendant. Dans ce moment, il ne songea sans doute qu'à ses richesses sauvées, à ses concurrents ruinés, à ses affaires dont le chiffre allait, par suite, s'arrondir honnêtement. Tout amateur de négoce qu'il était, hâtons-nous d'ajouter qu'il n'en fut pas moins reconnaissant envers Esope.

Il alla trouver les principaux magistrats et les personnages les plus influents de la province, et, de concert avec eux, il proposa à l'Aréopage de décerner à Esope de Samos le titre glorieux de huitième Sage de la Grèce.

L'Aréopage accueillit favorablement une demande formée par tout ce que la Phrygie avait de recommandable. Ce qui le prouve, c'est qu'après la mort d'Esope, Chrysès fit élever à son intendant un monument magnifique, sur lequel on lisait :

Arrête-toi, passant !
Ici repose
Le plus grand génie de la 68e Olympiade
Qui mérita d'être appelé
Le huitième Sage de la Grèce.

Les Athéniens, de leur côté, consacrèrent cette appellation, en dressant plus tard à Esope une statue qui était l'œuvre du célèbre Lysippe, et qui fut placée en face de celles des sept Sages.

Nul ne sait comment Esope est mort et de quelle façon a fini cette grossière enveloppe ; mais l'âme était belle, et elle vit encore, elle resplendit au milieu de nous. L'œuvre d'Esope (toute son âme) est la source féconde où l'on puisera toujours et qui jamais ne tarira. Aussi, le seul monument digne de cet immortel génie existe-t-il réellement :—c'est le souvenir que dans leurs cœurs les générations transmettront aux générations ; c'est la reconnaissance et l'admiration des peuples.

B. Pour les élèves des autres Collèges.

Traduire en anglais :—

1. Le vieil Homère avait bien raison d'admirer et de louer sans relâche chez son héros cette légèreté de pied qui suppose les qualités les plus rares et les plus précieuses de l'athlète, la vigueur et l'énergie jointes à la souplesse et à la finesse des formes. Pour l'acquérir ou tout au moins pour se rapprocher de ce modèle, le meilleur système, au dire des experts, est de s'élancer au galop toutes les fois qu'on en trouve l'occasion sur une distance de trente à quarante mètres, en s'efforçant de la franchir le plus vite possible. Mais il est surtout essentiel d'avoir un concurrent, pour que l'émulation se mette de la partie et fasse rendre au coureur tout ce qu'il peut donner.

2. C'était justement cette saison du printemps où les cœurs s'éveillent, où tout renaît, où la vie s'embellit, où tout nous invite au bonheur, où le ciel fait des promesses innombrables à ceux qui s'aiment! Partout Kobus rencontrait quelque spectacle de ce genre, pour lui rappeler Sûzel, et chaque fois il rougissait, il rêvait, il se grattait l'oreille et soupirait. Il se disait en lui-même : "Que les gens sont bêtes de se marier! Plus on voyage, plus on reconnait que les trois-quarts des hommes ont perdu la tête, et que dans chaque ville, cinq ou six vieux garçons ont seuls conservé le sens commun. Oui, c'est positif.....la sagesse n'est pas à la portée de tout le monde, on doit se féliciter beaucoup d'être du petit nombre des élus."

Traduire en français :—

On the sixth day of March, 1473—or, as would now be reckoned, 1874—Michel Angelo Buonarroti was born. A contemporary biographer informs us that a learned astrologer had calculated the horoscope of the infant, and found the position of the chief planets eminently favorable to its future fame; and without reposing much confidence in a prophecy probably remembered and possibly made, after its fulfilment, the period of his birth may be safely pronounced to have been eminently propitious to the full and free development of the artist's mighty and varied talents.

II.

1. Employer à la place de chaque nom en italique, un pronom en harmonie avec la phrase :—

On revient d'une faute à force de rougir *d'une faute.* Le bœuf rend à la terre tout autant que le *bœuf* tire *de la terre.* Si l'on accuse votre ami absent défendez *votre ami.* La vérité finit toujours par surmonter les obstacles qu'on oppose *à la vérité.* Les hommes ne devraient aimer les richesses que parce que *les richesses* donnent *aux hommes* les moyens d'assister les malheureux.

2. Faire l'analyse *grammaticale et logique* des phrases suivantes :

La vertu est aimable.

Cet habit est trop court.

Un favori du Sultan jeta une pierre à un pauvre derviche, qui lui avait demandé l'aumône.

3. Ecrire en toutes lettres, et en indiquant la prononciation, les nombres suivants : 5, 505, 521, 10,808, 927, 6,887.

III.

Donner quelques renseignements sur la vie et l'œuvre de deux écrivains de notre siècle (75 à 100 mots sur chacun).

IV.

Répondre à une des questions suivantes :

1. Hernani (*a*) Esquisser un portrait de Don Carlos, d'Hernani et de Doña Sol.

(*b*) Rendre en prose et sous forme de narration la scène du tombeau et celle des portraits.

2. Ecrire sous forme de compte rendu ou de critique environ cinq cents mots sur un des ouvrages suivants : Le Voyage de M. Perrichon, L'Ami Fritz, La Mare au Diable, Graziella, Le Gendre de M. Poirier, Les Frères Zemganno, Le Roi des Montagnes, Les Misérables, Le Marquis de Villemer, Pêcheurs d'Islande.

N.B.—Les Candidats sont priés de répondre en français exclusivement et de vouloir bien se servir d'un cahier séparé pour chacun des quatre chapitres. Pour le chapitre I A. ils pourront, s'ils le désirent, faire usage du petit Larousse.

Dater en toutes lettres.

SESSIONAL EXAMINATIONS.

2ME ANNÉE.

LE 13 AVRIL.

Examinateurs, ... { M. INGRES. J. L. MORIN.

I.

A. Pour les élèves de McGill et de Morrin :—

Reproduire par écrit le morceau suivant que l'examinateur voudra bien lire deux fois, à haute voix, et dont il recueillera les reproductions avant de distribuer le présent papier.

BENJAMIN FRANKLIN.

Lors de sa mission en France, Franklin était allé s'établir à Passy, où il vécut dans la société de Mme Helvétius et dans le commerce familier des littérateurs et des philosophes les plus distingués. Voltaire, qui avait alors plus de quatre-vingts ans, quitta Ferney pour venir à Paris. "A cette nouvelle, dit M. Mignet, tout le monde voulut voir le grand homme applaudir l'auteur de tant de chefs-d'œuvre, s'incliner devant le souverain intellectuel qui gouvernait l'esprit humain, en Europe, depuis cinquante ans. Franklin ne fut pas des derniers à le visiter. En le voyant entrer, Voltaire se mit à réciter en anglais quelques vers de l'Ode de Thompson à la liberté."

Puis Voltaire reprit la conversation en français, et lui dit avec une grâce spirituelle : "Je n'ai pas pu résister au désir de parler un moment la langue de M. Franklin."

A quelques jours de là (27 avril 1778), il y avait séance à l'Académie des sciences ; Voltaire et Franklin y assistaient l'un à côté de l'autre, au milieu des pleurs et des applaudissements des spectateurs. Ils se donnèrent la main ; le public leur cria de s'embrasser, ce qu'ils firent, et l'Europe sut le lendemain que Solon et Sophocle s'étaient embrassés.

Le Sage de Boston présenta son petit-fils au patriarche de Ferney et lui demanda de le bénir : "God and liberty, dit Voltaire en étendant ses mains sur la tête du jeune homme ; voilà la seule devise qui convienne au petit-fils de M. Franklin."

Parmi les philosophes que Franklin fréquentait dans les salons de Mme Helvétius, il faut citer Turgot, qui fit sur l'inventeur du paratonnerre le vers si connu :

Eripuit cœlo fulmen sceptrumque tyrannis.

(L'examinateur voudra bien écrire ce vers sur le tableau noir, et les candidats le traduiront en français.)

Une anecdote assez piquante se rapporte au séjour de Franklin à Paris. Un jour, il dînait en compagnie de l'ambassadeur d'Angleterre chez un haut fonctionnaire français. Quand fut arrivé le moment du dessert, c'est-à-dire des toasts, l'ambassadeur se leva et porta celui-ci : "A l'Angleterre, le brillant soleil dont les rayons illuminent le monde." Le français, pour mettre d'accord le patriotisme et la politesse, répondit : "A la France, la lune dont les doux rayons dissipent les ombres de la nuit." Vint le tour de Franklin, dont on examinait la contenance d'un œil inquisiteur. Il se leva sans manifester le moindre embarras, et, avec un sourire légèrement ironique : "Au général George Washington, dit-il, le Josué qui a commandé au soleil et à la lune de s'arrêter."

Il retourna en Amérique aussitôt après la conclusion de la paix ; mais ce ne fut nullement pour se reposer. Pendant trois années encore il eut à remplir les fonctions de gouverneur président de Pensylvanie ; puis il

fut envoyé à l'assemblée chargée de rédiger une constitution pour les Etats-Unis.

Sentant sa fin approcher, Franklin, par un dernier reste de coquette bonhomie, demanda qu'on fit son lit, "afin, disait-il, de pouvoir mourir d'une façon décente." Il s'éteignit doucement, le 17 avril 1790, à l'âge de quatre-vingt-quatre ans. On lui fit des funérailles comme il ne s'en était jamais vu en Amérique.

Son testament, qui renfermait plusieurs fondations d'utilité publique, se terminait par cette phrase: "Je lègue à mon ami, l'ami du genre humain, le général Washington, le bâton de pommier sauvage avec lequel j'ai l'habitude de me promener; si ce bâton était un sceptre, il lui conviendrait de même." Quel éloge éloquent en ce peu de mots, et quels deux grands hommes admirables que Washington et Franklin! Ils resteront éternellement comme les modèles du désintéressement, de l'honneur et du patriotisme.

B. Pour les élèves des autres collèges:—

1. Traduire en anglais:

Monsieur le marquis, voilà un quart de siècle, de grandes choses allaient s'accomplir, une aurore nouvelle se levait sur la France. Vous n'étiez pas de ceux qui la saluaient alors avec amour, car vous fûtes un des premiers qui donnèrent le signal du départ. La patrie vous rappela, c'était son devoir; vous fûtes sourd à son appel, c'était sans doute votre bon plaisir; elle confisqua vos biens, c'était sa volonté souveraine.

Ces biens devinrent la propriété de la nation, un de vos fermiers les acheta du prix de ses sueurs, et lorsqu'il eut recousu lambeaux par lambeaux le domaine de vos ancêtres, il s'en dépouilla comme d'un manteau et vous le mit sur les épaules.

Par quel enchantement cet homme se porta-t-il à un tel excès de générosité? Comment se décida-t-il à résigner entre vos mains la sainte propriété du travail?

Ce que je sais, moi, c'est que cet homme mourut sans s'être seulement réservé un coin de terre pour son dernier sommeil, vous laissant, Monsieur le marquis, paisible possesseur d'une fortune qui ne vous avait coûté d'autre peine que de rentrer en France et d'ouvrir la main pour la recevoir.

Melle de la Seiglière.

2. S'il y a quelque chose de triste au monde, c'est une vente après décès. La foule entre de plain-pied dans un intérieur fermé jusque là, et qui ne s'ouvrait qu'à la parenté ou qu'à l'amitié; elle se promène partout, avide et curieuse, surtout si le mort a joui de quelque célébrité, profanant les recoins secrets, bourdonnant autour de l'autel des lares domestiques. Ces meubles qui gardent encore l'empreinte de la vie, ces livres laissés ouverts sur la table, comme pour en reprendre plus tard la lecture;

ces pendules au balancier immobile où l'œil du maître a lu sa dernière heure ; ces portraits des aïeux ou d'êtres plus chers encore ; ces tableaux, orgueil de la maison ; tous ces petits objets familiers, dont se compose la physionomie d'une maison, s'en vont dispersés comme des feuilles éparpillées au vent, deçà, delà, perdant le sens que leur donnait leur réunion, commencer ailleurs une autre existence, souvenirs abolis, hiéroglyphes indéchiffrables désormais. Certes, c'est là un spectacle navrant, plein d'idées lugubres et de réflexions amères !

TH. GAUTIER.

3. Traduire en français :—

Thus they rose in the morning and lay down at night, pleased with each other and with themselves, all but Rasselas, who, in the twenty-sixth year of his age, began to withdraw himself from their pastimes and assemblies, and to delight in solitary walks and silent meditation. He often sat before tables covered with luxury, and forgot to taste the dainties that were placed before him ; he rose abruptly in the midst of the song, and hastily retired beyond the sound of music. His attendants observed the change, and endeavoured to renew his love of pleasure : he neglected their officiousness, repulsed their invitations, and spent day after day on the banks of rivulets sheltered with trees, where he sometimes listened to the birds in the branches, sometimes observed the fish playing in the stream, and anon cast his eyes upon the pastures and mountains filled with animals of which some were biting the herbage and some sleeping among the bushes.

JOHNSON, RASSELAS.
Chap. II.

II.

Répondre à deux des questions suivantes :—

1. Comment forme-t-on le pluriel des noms composés ?

2. Indiquer l'origine de la règle du participe avec *avoir*, et dire comment ce participe est traité lorsqu'il est suivi d'un infinitif.

3. Choisir l'une des deux expressions entre parenthèses, et motiver ce choix :—

Vous ou votre ami (aurez ou auront) la complaisance de venir.

Plus d'un (aurait ou auraient) fait comme moi.

L'honnête homme (aime et s'attache à ses devoirs ou aime ses devoirs et s'y attache).

C'est à vous (à qui ou que) je parle.

4. Copier l'extrait suivant en remplaçant les infinitifs par les formes qui conviennent au sens :—

L'histoire des bohémiens *être* encore un problème. On *savoir* à la vérité que leurs premières bandes, fort peu nombreuses, se *montrer* dans l'est de

l'Europe, vers le commencement du XV siècle ; mais on ne *pouvoir dire* ni d'où ils *venir* ni pourquoi ils *venir* en Europe, et, ce qui *être* plus extraordinaire, on *ignorer* comment ils se *multiplier* en peu de temps d'une façon si prodigieuse.

Les bohémiens eux-mêmes *conserver* aucune tradition sur leur origine, et si la plupart d'entre eux *parler* de l'Egypte comme de leur patrie primitive, *c'être* qu ils *adopter* une fable très anciennement *répandre* sur leur compte.—(Carmen).

III.

1. Tracer l'origine de la langue française. (150 à 200 mots).

2. Quelles sont les modifications principales que subit le latin en devenant la langue des Gallo-Romains ?

3. Donner quelques renseignements sur la vie et l'œuvre de deux écrivains du XVI siècle. (75 à 100 mots sur chacun).

IV.

Répondre à une des questions suivantes :

1. Melle de la Seiglière.

(*a*) Faire un résumé de la situation politique et sociale en France à l'époque de la pièce. (150 à 200 mots).

(*b*) Faire une esquisse biographique de Bernard.

(*c*) Faire un portrait ébauché du marquis, de la baronne, de Melle de la Seiglière et de Destournelles.

(*d*) Expliquer en français les locutions suivantes :

Faire les yeux doux.—Se faire tirer l'oreille.
En avoir le cœur net.—Etre sur les dents.
Va pour la guerre.—Etre en mesure.

2. Écrire sous forme de compte-rendu ou de critique environ cinq cents mots sur un des ouvrages suivants : Carmen.—L'Abbé Constantin —René.—La Belle Nivernaise.—Tartarin de Tarascon.—Un Saint.—Le Monde où l'on s'ennuie.—Cinq-Mars.—Les Misérables.—Eugénie Grandet.—Corinne.

N.B.—Les candidats sont priés de répondre en français exclusivement, et de vouloir bien se servir d'un cahier séparé pour chacun des quatre chapitres. Pour le chapitre I. A. ils pourront, s'ils le désirent, faire usage du petit Larousse.

SESSIONAL EXAMINATIONS.

TROISIÈME ANNÉE.

LE 15 AVRIL.

Examinateurs,..... { M. INGRES. J. L. MORIN.

I.

Composition d'une heure pour laquelle les candidats pourront, s'ils le désirent, faire usage du petit Larousse.

II.

1. Faire un résumé des principaux évènements politiques en France depuis 1789 jusqu'à nos jours.

2. Esquisser le mouvement littéraire en France depuis la Renaissance jusqu'au Romantisme.

3. Donner quelques renseignements sur la vie et l'œuvre de deux des écrivains suivants : V. Hugo, Th. Gautier, de Vigny, Balzac, J. J. Rousseau, Voltaire, Molière, Racine, de Sévigné.

4. Indiquer les principales différences entre la tragédie classique et le drame moderne.

III.

Dans les vers suivants indiquer et expliquer les expressions tombées en désuétude, ou les mots pris dans une acception qu'ils n'ont plus aujourd'hui ; où il y a ellipse, inversion ou autres figures de syntaxe, rétablir l'ordre grammatical :

(1) Non ; j'ai peint votre cœur dans une indifférence
Qui n'enfle d'aucun d'eux ni détruit l'espérance.

(2) Et puisque don Rodrigue a résolu son père
Au sortir du conseil à proposer l'affaire,
Je vous laisse à juger s'il prendra bien son temps,
Et si tous vos désirs seront bientôt contens.

(3) Ne t'étonne donc plus si mon âme gênée
Avec impatience attend leur hyménée.

(4) Je souffre cependant un tourment incroyable,
Jusques à cet hymen Rodrigue m'est aimable.

(5) Ma gloire et mon amour ont pour moi tant d'appas,
Que je meurs s'il s'achève ou ne s'achève pas.

(6) Voulez-vous demeurer dedans la réverie ?
Non, je veux seulement, malgré mon déplaisir,
Remettre mon visage un peu plus à loisir.

7) Pour grands que soient les rois, ils sont ce que nous sommes.

(8) A des partis plus hauts ce beau fils doit prétendre,
Et le nouvel éclat de votre dignité
Lui doit enfler le cœur d'une autre vanité.
Exercez-la, monsieur, et gouvernez le prince;
Montrez-lui comme il faut régir une province.

(9) Il vaut mieux courir au trépas.
Je dois à ma maîtresse aussi bien qu'à mon père.

(10) J'ai le cœur au-dessus des plus fières disgrâces.

(11) Sais-tu que ce vieillard fut la même vertu,
La vaillance et l'honneur de son temps? le sais-tu?

(12) ..... Une âme accoutumée aux grandes actions
Ne se peut abaisser à des soumissions.

IV.

Ecrire sous forme de compte rendu, d'analyse ou de critique, environ cinq cents mots sur un des ouvrages suivants

Paul et Virginie, Le Siècle de Louis XIV, Emile, Le Tartuffe, Phèdre, Athalie, Le Cid, Les Lettres Provinciales, Gil Blas.

N.B.—Les candidats sont priés de répondre en français exclusivement, et de bien vouloir se servir d'un cahier séparé pour chaque chapitre.

B.A. ORDINARY.

Le 15 Avril.

Examinateurs,..... .... { M. Ingres. J. L. Morin.

I.

Composition d'une heure pour laquelle les candidats pourront, s'ils le désirent, faire usage du petit Larousse.

II.

Thèse ou Essai. (Sujet au choix du candidat.)

III.

1. Faire un tableau général du mouvement littéraire en France depuis les origines jusqu'à nos jours. (De 500 à 600 mots).

2. Définir le Romantisme et décrire ce mouvement dans son origine, ses doctrines et ses résultats. (Environ 500 mots.)

3. Apprécier l'œuvre des écrivains suivants:—Rabelais, Montaigne, Chateaubriand, Alfred de Musset. (75 à 100 mots pour chacun.)

4. (*a*) Reproduire en français moderne les citations suivantes de Rabelais et (*b*) signaler les particularités grammaticales et autres :

(1) "Les corbeaux, les gays, les estournaults, il rend poètes ; les pïes il fait poetrides, et leur apprend le langage humain proferer, parler, chanter."

(2) "Hérodes.....prévoyant que à sa mort, les Juifs feroient feu de joie fit en son serrail de toutes villes, bourgades de Judée, tous les nobles et magistrats convenir."

(3) "J'amène mes moutons d'un pays onquel les pourceaux ne mangent que myrobolans."

(4) "Panurge choisit de tout le troupeau un beau et grand mouton, et l'emportait criant, bellant, voyans tous les autres ensemblement bellans et regardans quelle part on menoit leur compagnon."

(5) "Quelqu'un de ses amis lui demanda quelle cause le mouvoit à son corps, son esprit, son tonneau ainsi tourmenter."

(6) "Mais avoir diligemment recherché, trouvèrent le pays à l'environ en paix et en silence."

(7) "Comme si le père familles estant à table opulente, en bon appétit, au commencement de son repas, on aveyait en sursault et espouvanté soy lever....."

IV.

1. Ecrire sous forme de compte-rendu, de critique ou d'analyse, environ cinq cents mots sur un des ouvrages suivants:—Tartarin de Tarascon, Jack, Notre Dame de Paris, De l'Allemagne, René, l'Art Poétique, La Satire Ménippée, La Chanson de Roland.

2. Indiquer la nature, la qualité et la disposition des rimes dans le morceau suivant, et traduire ce morceau en anglais :

La petite Jeanne est un ange
Ayant pour ailes de rubans.
Entre leurs nœuds rouges, flambants
Cette reine attend qu'on la mange.

Elle chante, gazouille et rit,
Et dit vaguement mille choses,
Elle observe, elle a de l'esprit
Jusqu'au bout de ses dix doigts roses.

Et son grand père, que j'absous
Dissimule en vain son extase
Tandis que "la merveille" jase
Furtif il admire en dessous

Ses yeux bleus comme les pervenches,
Ses yeux clairs et divins, ses yeux
Pareils à des bluets très bleus
Dans un bouquet de roses blanches.

JULES LEMAITRE.

3. Indiquer l'origine et l'application des locutions suivantes:—
C'est plus qu'un crime, c'est une faute.
Le pavé de l'ours.
Nous avons changé tout cela.
L'abîme de Pascal.
Revenir à ses moutons.

N.B.—Les candidats sont priés de bien vouloir se servir d'un cahier séparé pour chaque chapitre.

BACCALAURÉAT ÈS-LETTRES (HONNEURS).

25 AVRIL ET JOURS SUIVANTS.

Examinateurs,..... .... { M. INGRES. J. L. MORIN.

1. Définir le mot "doublets," et en citer une demi-douzaine.

2. Dire comment la lettre *S* est devenue la marque du pluriel.

3. Rendre en français moderne les passages suivants; dire à quelle époque ils appartiennent et motiver ce dire.

A. Buona pulcella fut Eulalia
Bel avret corps, bellezour anima
Voldrent la veintre li Deo inimi;
Voldrent la faire diavle servir.
Elle non eskoltet les mals conseilliers,
Qu'elle Deo raneiet chi maent sus en ciel.
Ne por or ned argent ne paramenz
Por manatce regiel, ne preiment
Neule cose non la povret omque pleier
La polle sempre non amast lo Deo menestrier;
Et por o fut presentede Maximiien
Chi rex eret a cels dis sovre pagiens

B. La dame fuo ou bois, qui durement plora
Ces leus oï huller et li huans hua
Il esclaire forment et roidement tonna
Et pluet menusment et gresille et venta.
C'est hideus tens a dame qui conpaignie n'a.
Dame Dieu et ses sains doucement reclama
Quant ot fet sa proiere, son mantel escourça
A Dieu s'est comandée, aval le bois s'en va.

C. C'est ce me semble, l'un des grands moïens de rendre un homme saige d'avoir leu les histoires anciennes et apprendre a se conduire et guarder et entreprendre saigement par icelles et par les exemples de nos predecesseurs. Car notre vie est si briefve qu'elle ne suffit a avoir de tant de choses experience.

D. Mes cheres Ames, apprenant du Souuerain Pasteur des Pasteurs que le principal office du Pasteur est de paistre son troupeau, la charge qu'il a pleu à Dieu me donner en ce Diocese et l'amour tendre auec lequel ie souhaite vostre salut m'ont porté à vouloir m'acquitter utilement enuers vous de ce à quoy ie me sens obligé en ce poinct.

E. Je scai bien ce que je désire mais je ne scai pas ce que je feray. Je suis malade de la tete aux pieds il ny a que mon cœur de sain et cela n'est bon à rien.

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1. Tracer le rôle de l'élément grotesque dans l'Art en général et dans la littérature française en particulier.

2. Déterminer, d'après la littérature française, quel est le génie du peuple français.

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1. Sur quel caractère philologique se base-t-on en divisant les idiomes romans en deux groupes : 1. le groupe italo-hispanique ; et 2. le groupe franco-provençal.

2. Montrer l'évolution analytique de la langue française depuis ses origines jusqu'à son état actuel, et en apprécier en passant le progrès par rapport au groupe italo-hispanique.

3. Quels sont les points essentiels caractérisant les langues romanes par rapport au latin et prouvant l'uniformité dans la création de ces langues ?

4. Commenter, dans l'extrait suivant, le passage en italique : " Le " diagramme de développement du groupe roman tout entier se présente " ainsi : la latinité qui est le type ; le travail interne qui, la décomposant, " donne naissance au latin moderne ou roman ; la conservation des cas " dans un premier sous-groupe : la perte complète des cas dans le second " sous-groupe ; et finalement la perte des cas dans le premier, qui de cette " façon se réunit au second et devient semblable à lui. *Si on réfléchit à* " *ces faits et aux connexions qui prévalent avec tant de force dans les choses* " *historiques, on verra qu'ils ne sont pas sans importance pour la connaissance de* " *l'histoire littéraire des peuples romans, et même de leur histoire politique, et* " *qu'ils sont un des éléments d'une conception positive et étendue de l'histoire* " *romane.*"

E. Littré.

5. La Renaissance a-t-elle profité ou nui au développement du théâtre en France? Comment?

Montrer l'évolution du genre historique en France.

Apprécier la vie et l'œuvre de deux des écrivains suivants: Ronsard, Rabelais, Calvin, Chateaubriand, Froissart, Pascal, Villon, Molière, V. Hugo, Montaigne, Malherbe, A. de Musset.

Citer trois écrivains qui se sont spécialement occupés de la question de l'enseignement; exposer leurs doctrines et établir leur influence sur la pédagogie.

Faire un tableau de la littérature française à une des époques suivantes: 1830, 1789, 1700, 1600, 1500.

HONOUR EXAMINATIONS.

TROISIÈME ANNÉE.

PHONÉTIQUE—GRAMMAIRE HISTORIQUE.

VENDREDI, LE 2 AVRIL : DE 9 HEURES À MIDI.

Examinateurs..... { M. INGRES. J. L. MORIN.

1. "La voyelle tonique latine reçoit différentes formes selon qu'elle est *libre* ou *entravée*." Expliquez les termes en italique, et appliquez la règle ci-dessus énoncée aux voyelles *a*, *e*, *i*. Donnez des exemples.

2. Dans quels cas les voyelles atones se conservent-elles? Exemples.

3. Quel est l'effet habituel de la gutturale sur les voyelles qui la suivent ou la précèdent? Exemples.

4. Quel changement subissent les voyelles *a*, *ē*, *ī*, *ō*, *ū* devant une nasale? Exemples.

5. Entre deux voyelles, ou après une voyelle et avant une autre consonne, que deviennent: (*a*) les gutturales *c*, *g*; (*b*) les labiales *p*, *b*, *f*, *v*; (*c*) les dentales?

6. Quelle est la différence entre (*a*) les *mots savants* et les *mots populaires*; (*b*) les mots de formation latine et les mots de formation française? Exemples.

7. Quelles sont les déclinaisons des noms féminins et des noms masculins dans le vieux français?

8. Donnez les différents cas des mots suivants: *fel*, *gars*, *enfes*, *ber*. *sire*, *ancestre*, *sœur*, *comte*, *pecheor*, *compagnon*.

9. Expliquez l'apparente anomalie de ces expressions: *grand mère; sa raison était tel.*

10. Quel est le rôle de *l'analogie* et de *l'assimilation* dans la formation des verbes français?

11. Donnez les caractères particuliers (*a*) de la conjugaison *incohative*, (*b*) des conjugaisons *vivantes?*

12. (*a*) A quoi est dû le double radical des verbes *mener, lever, prier, demeurer, mourir, trouver, peser?* (*b*) Quel est le double radical de ces verbes? (*c*) Conjugez un de ces verbes à tous les temps simples.

HONOUR EXAMINATIONS.

FRANÇAIS.

Origines de la Littérature Française, Anciens Textes.

TROISIÈME ANNÉE.

VENDREDI, 9 AVRIL : DE 9 HEURES À MIDI.

Examinateurs, ... { M. INGRES. J. L. MORIN.

1. (*a*) Quelle est la différence entre l'*histoire de la littérature* et l'*histoire de la langue*? (*b*) Quelle espèce de latin parlait le peuple en Gaule? (*c*) Quelle est la plus importante loi étymologique de la transformation du latin en français? Expliquez-la par des exemples.

2. (*a*) Que doit-on entendre par *Cycles* et *Chansons de gestes*? (*b*) Quelles sont les trois sources où les poètes du XIIe siècle et du XIIIe ont puisé les sujets de leurs longs poèmes narratifs? (*c*) Qu'a produit chacune de ces sources?

3. Analyse sommaire de la *Chanson de Roland.*

4. (*a*) En quoi la versification du moyen âge différait-elle des règles actuelles?

(*b*) Quelle est la différence entre *assonance* et *rime*?

(*c*) Qu'était la *laisse*?

5. Rendez en français moderne les extraits suivants:

Donc prent li pédre de ses meillors serjanz :
Par moltes terres fait querre son enfant.
Jusque en Alsis en vindrent doi edrant :
Iluec trovérent dans Alexis sedant ;
Mais ne conurent son vis ne son semblant.
Si ont li enfes sa tendre charn mudéde

Nel reconurent li doi serjant son pédre :
A lui medisme ont l'almosne donéde ;
Il la reçut come li altre frédre.
Nel reconurent, sempres s'en retornérent.

Cil s'en repaidrent à Rome la citét,
Noncent al pédre que nel pourent trover,
Sed il fut grains ne l'estuet demander.
La bone médre s'en prist a dementer,
Et son chier fil sovent a regreter.

Vie de Saint Alexis.

6. (*a*) En quoi consiste l'unité relative du *roman de Renart*? (*b*) Donnez un court aperçu de ce roman.

7. Rendez en français moderne les extraits suivants pris de ce roman :

"Par les Sainz Deu, que voi je la ?
Estes vos ce, sire compére ?
Bien ait hui l'ame vostre pére
Dant Rohart, qui si sot chanter !
Mainte foiz l'en oï vanter
Qu'il en avoit le pris en France.
Vos meïsmes, en vostre enfance,
Vos en solïez molt pener.
Savez-vos mais point orguener ?
Chantez-moi une rotruenge !"
Tiecelins entent la losenge,
Uevre le bec, si giéte un brait.
Et dist Renarz : "Ce fu bien fait ;
Miex chantez que ne soliez.
Encore se vos volïez,
Irïez plus haut une jointe."

8. (*a*) Quels sont les auteurs du Roman de la Rose? (*b*) Quelle part revient à chacun, et (*c*) quel en est le mérite relatif?

9. Rendez en français moderne :

Après fu Viellèce portraite.....
Li tens qui s'en vait nuit et jor,
Sans repos prendre et sans sejor,
Et qui de nos se part et emble
Si celléement qu'il nous semble
Qu'il s'areste adès en un point,
Et il ne s'i areste point,
Ains ne fine de trespasser,
Que nus ne puet neis penser
Quex tens ce est qui est presens.....

Li tens qui ne puet sejorner,
Ains vait tos jors sans retorner,
Come l'eave qui s'avale tote,
N'il n'en retorne arriére gote ;
Li tens vers qui noient ne dure,
Ne fers, ne chose tant soit dure,
Car il gaste tout et manjue ;.....

Roman de la Rose.

GERMAN.

FIRST YEAR.

ARTS AND APPLIED SCIENCE.

TUESDAY, APRIL 13TH:—AFTERNOON, 2 TO 4.

Examiner,.....L. R. GREGOR, B.A., Ph.D.

[N.B.— Students in Applied Science will answer first five questions only.]

Joynes' German Reader, van der Smissen's Grammar.

1. Translate :—

(*a*) Wer iſt ein Mann ? Wer glauben kann
Inbrünſtig, wahr und frei ;
Denn dieſe Wehr bricht nimmermehr,
Sie bricht kein Menſch entzwei.

Wer iſt ein Mann ? Wer lieben kann
Von Herzen fromm und warm ;
Die heil'ge Glut giebt hohen Mut
Und ſtärkt mit Stahl den Arm.

Dies iſt der Mann, der ſtreiten kann
Für Weib und liebes Kind ;
Der kalten Bruſt fehlt Kraft und Luſt,
Und ihre That wird Wind.

(*b*) Jetzt ging er wieder zurück und ſtellte eine recht traurige Betrachtung bei ſich ſelbſt an, was er für ein armer Teufel ſei unter

ſo vielen reichen Leuten in der Welt. Aber als er eben dachte: „Wenn ich's doch nur einmal ſo gut bekäme, wie dieſer Herr Kannitverſtan es hat!" kam er um eine Ecke und erblickte einen großen Leichenzug. Vier ſchwarz vermummte Pferde zogen einen ebenfalls ſchwarz überzogenen Leichenwagen langſam und traurig, als ob ſie wüßten, daß ſie einen Toten in ſeine Ruhe führten. Ein langer Zug von Freunden und Bekannten des Verſtorbenen folgte nach, Paar und Paar, verhüllt in ſchwarze Mäntel, und ſtumm. In der Ferne läutete ein einſames Glöcklein.

2. Translate into German:

(*a*) He would be ashamed, if he had not finished his exercise. (*b*) The doctor shook his head, for he had no hope. (*c*) I am ashamed of you, because you are not industrious. (*d*) The ladies have been in church, but they are now at home. (*e*) Our cousin lived happy and in peace with his neighbors. (*f*) To-day we are learning German, to-morrow we will learn Latin.

3. In what circumstances do you use the several personal pronouns of the second person?

4. Give the first person singular of all tenses of any verb.

5. What do you know about the order of words in a German sentence?

6. Translate into German:

(*a*) The pupils would look for the words in a dictionary, if they had time. (*b*) My father sent me instead of Max, because Max was too tired. (*c*) He asked me which of these gentlemen was my brother. (*d*) People who are not industrious, do not become rich. (*e*) My sister did not sing at the concert, because she was hoarse. (*f*) The gardener was burning the boughs, which he had cut from the trees. (*g*) To whom were you writing the long letter yesterday? (*h*) The patient is better to-day; he will be allowed to go out to-morrow. (*i*) Many a one begins what he will never finish. (*j*) The whole of England is not so large as the Province of Manitoba.

7. Give the principal parts of the strong verbs in Question 1 (*a*) and (*b*).

8. Decline the pronoun *derjenige*. In what situations is it employed?

9. "The genitive of *der* is frequently used to replace the possessive adjective of the 3rd person, in order to avoid ambiguity." Illustrate by a well-composed sentence.

GERMAN.

FIRST YEAR DONALDA DEPARTMENT.

WEDNESDAY, APRIL 14TH, 1897:—AFTERNOON, 2 TO 5.

Examiner,.....L. R. GREGOR, B.A., Ph.D.

Heine's Harzreise, Freytag's Journalisten, Uhland's Ballads, Thomas' German Grammar.

1. Translate into English:

(*a*) Dieſer Mann, tief in den Fünfzigen, war eine perſonificierte grade Linie. In ſeinem Streben nach dem Poſitiven hatte der arme Mann ſich alles Herrliche aus dem Leben herausphiloſophiert, alle Sonnenſtrahlen, allen Glauben und alle Blumen, und es blieb ihm Nichts übrig, als das kalte poſitive Grab. Auf den Apoll von Belvedere und auf das Chriſtenthum hatte er eine ſpecielle Malice. Gegen Letzteres ſchrieb er ſogar eine Broſchüre, worin er deſſen Unvernünftigkeit und Unhaltbarkeit bewies. Er hat überhaupt eine ganze Menge Bücher geſchrieben, worin immer die Vernunft von ihrer eigenen Vortrefflichkeit renommiert, und wobei es der arme Doktor gewiß ernſthaft genug meinte, und alſo in dieſer Hinſicht alle Achtung verdiente. Darin aber beſtand ja eben der Hauptſpaß, daß er ein ſo ernſthaft närriſches Geſicht ſchnitt, wenn er Dasjenige nicht begreifen konnte, was jedes Kind begreift, eben weil es ein Kind iſt.

(*b*) Der König ruft mit einemmal:
"Hilf, Himmel! seh' ich recht?
Ich hab' verspottet im offnen Saal
Mein eigenes Geschlecht.

"Hilf, Himmel! Schwester Bertha, bleich,
Im grauen Pilgergewand!
Hilf, Himmel! in meinem Prunksaal reich
Den Bettelstab in der Hand!"

(*c*) Piepenbrink. Das sind zwei Karten, die eben so richtig sind als meine. Ihr habt sie ja allenthalben ausgetragen, wie sauren Most.—Ho ho! ich sehe wohl, wie die Sache steht. Ich gehöre auch nicht zu eurer Geschichte, mich aber wollt ihr haben. Deshalb seid ihr mir zwei oder dreimal in's Haus gelaufen, weil ihr dachtet mich zu kapern. Weil ich Wahlmann bin, deshalb liegt euch an mir; aber dieser Ehrenmann ist kein Wahlmann, an dem liegt euch nichts. Solche Schliche kennen wir.

(*d*) Oberst. Unwürdiges Volk, diese Herren von der Feder! Feig, boshaft, hinterlistig in ihrer Anonymität. Wie diese Bande jetzt triumphiren wird, und über mich! Wie sie ihren Redacteur bis in die Wolken erheben! Da liegt das nichtswürdige Blatt! Darin steht meine Niederlage, ausposaunt mit vollen Backen, mit spöttischem Achselzucken——weg damit! (geht auf und ab, sieht die Zeitung auf der Erde an, sie aufhebend) Ich will's doch auskosten! (setzt sich) Hier gleich im Anfange: (lesend) Professor Oldendorf—Majorität von zwei Stimmen. „Dies Blatt ist verpflichtet, sich über das Resultat zu freuen."—Das glaub' ich.—„Aber nicht weniger erfreulich war der Wahlkampf, welcher vorranging."—Natürlich.—„Es ist vielleicht noch nicht dagewesen, daß, wie hier, zwei Männer einander gegenüberstanden, so eng durch jahrelange Freundschaft verbunden, beide in gleicher Weise durch das Wohlwollen ihrer Mitbürger ausgezeichnet.

2. Translate into German:

(*a*) In the street two little school boys met me, one of whom said to the other: "I won't play with Theodore any more, for

yesterday he did not even know the genitive of *Mensa*. (*b*) It was pitch dark when I arrived in Osterode. I had no appetite and went to bed at once. I was as tired as a dog. In my dream I came back to Göttingen, to the Göttingen Library. I was standing in a corner of the legal room, and reading some old dissertations, when to my amazement I noticed it was night, the neighboring church bell struck twelve, the door opened slowly and in walked a proud, gigantic woman, most respectfully escorted by the members of the law faculty.

3. Translate into German :

(*a*) Good evening, doctor. How do you do this evening ?—Very well, thank you. How are they all at your house ? I am sorry, but my little girl is sick again.—Is it possible ? What is the matter with her this time ?—Oh, she has the old head-ache again, and with it a little fever. (*b*) How do you inflect the pronoun *es* ?—I have forgotten what the genitive is.—Well, that is not so very strange. Have you ever met the genitive of *es* in your reading ?—Never, so far as I can remember. Probably it is not much used.—Not much, to be sure. Still it does occur occasionally. What is ordinarily used instead of it ?

4. Give a brief account of Uhland's connection with the University of Tübingen.

(*or*) Give an account of Heine's university life.

5. What pronoun takes the place of *man* in the oblique cases ? What about the declension of *wenig* ? of *jemand* ? of *etwas* ?

6. Distinguish between the true passive and the quasi-passive.

7. Answer the following questions in German.

(*a*) Was für ein Redeteil ist "Frau ? Zu welcher Deklination gehört es ? Was ist das Kennzeichen der schwachen Deklination ? Kennen Sie ein anderes Wort von ähnlicher Bedeutung ? (*b*) Erklären Sie das Grundprinzip, nach dem die Flexion eines Adjektivs sich richtet. Wann wird starke und wann wird schwache Flexion gebraucht ? Wollen Sie die Wortverbindung "einer armen Frau" in allen möglichen Kasusformen flektieren ?

8. Reading.

GERMAN.

SECOND YEAR.

TUESDAY, APRIL 13TH :—AFTERNOON, 2 TO 4.30.

Examiner,.....L. R. GREGOR, B.A., Ph.D.

Jensen's Braune Erica ; Freytag's Journalisten ; Uhland's *Ballads ;* van der Smissen's *German Grammar.*

1. Translate :—

(*a*) Neben ihm im Coupé saß ein halb Dutzend junger Burschen, deren Kleidung ihren ländlichen Beruf und den Zweck ihrer Reise in die Residenzstadt verriet. Sie hatten sich schmuck zum Pfingstfest ausstaffirt, manche trugen buntfarbige Bänder auf dem Hute. Auf den Knieen hielten sie dickbäuchige, mit Fuchs- oder Seehundsfell überzogene Taschen, aus denen allerlei Stadtpräsente für die Muhme oder den Schatz hervorlauerten. Alle Gesichter waren fröhlich, wie die sonnige Gegend draußen, und sie lachten durcheinander. Aber sie rauchten auch Tabak aus kurzen, silberbeschlagenen Meerschaumpfeifen, das war dem Professor ein Greuel.

(*b*) K o r b. Ja, das ist schwer zu sagen. Da ist dieser Herr von Senden, der jetzt in der Stadt wohnt. Wenn einer Aussicht hat, wird er's wohl sein. Er ist geschäftig um uns, wie ein Wiesel. Eben erst, wie ich ausgehen will, schickt er ein ganzes Dutzend Eintrittskarten zu dem großen Ressourcen-Fest in unser Haus. Es muß so eine Ressource sein wo die vornehmen Leute mit den Bürgern Arm in Arm gehen.

V o l z. Ja, es ist eine politische Gesellschaft, bei welcher Senden Direktor ist. Sie hält einen großen Fischzug nach Wahlmännern. Und der Oberst und die Damen werden hingehen?

(*c*) O b e r s t. Gerade diese Fassung ist mir ärgerlich. Wenn sie nur einmal schreien wollte und sich etwas in die Haare fahren ; es wäre schrecklich, aber es wäre doch Natur darin. Aber dies Lächeln und sich Abwenden und dies Abtrocknen heimlicher Thränen, das nimmt mir meine Fassung. Das ist bei meinem Kinde unnatürlich.

Adelheid. Vielleicht kennt sie das gütige Herz ihres Vaters besser als er selbst, vielleicht hofft sie noch!

(*d*) Frau Bertha saß in der Felsenkluft,
Sie klagt' ihr bitteres Los;
Klein Roland spielt' in freier Luft,
Des Klage war nicht groß.

O König Karl, mein Bruder hehr,
O daß ich floh von dir
Um Liebe ließ ich Pracht und Ehr;
Nun zürnst du schrecklich mir.

2. Reading.

3. Translate into German:

(*a*) Tie your horse to the tree and come in out of the rain. Have you brought any oats with you?—Yes, but not enough for the journey. I am sorry to keep (lassen) you waiting. I am afraid you will catch cold.—You will find everybody at home, "great-grandmother, grandmother, mother and child." (*b*) In what year were you born?—In 1868 on the twenty-fourth of May.—Your birthday is celebrated magnificently every year, isn't it? Will you take a trip to Europe this summer?—My doctor has advised me to do so, and I grant (zugeben) I should like to very much. (*c*) Of all animals the horse runs quickest. (*d*) These two ships set sail at the same time, but the smaller arrived first. (*e*) I should have liked to see your brother. (*f*) At what shoemaker's do you get your boots made? (*g*) Have you found out at what o'clock the meeting takes place? (*h*) Have you decided to leave town and pass the summer in the country? (*i*) I do not think much of this gentleman; he would do anything for money. (*j*) Some months afterwards the treaty of Paris was signed. (*k*) If I had thought of that, I should have gone to meet you.

4. Give as many meanings and uses as possible of mögen, müssen, sollen.

5. What about the number of nouns of quantity and the case of names of objects of which the quantity is expressed?

6. Give the principal parts of the strong German verbs in Question 1 (*a*, *b* and *c*) *or* in the answer to Question 3.

GERMAN.

SECOND YEAR.

DONALDA DEPARTMENT.

TUESDAY, APRIL 13TH :—AFTERNOON, 2 TO 5.

Examiner,..... .....L. R. GREGOR, B.A.,PH.D.

Hermann und Dorothea, Minna von Barnhelm.

1. Translate into English :—

(*a*) Soll doch nicht als ein Pilz der Mensch dem Boden entwachsen,
Und verfaulen geschwind an dem Platze, der ihn erzeugt hat,
Keine Spur nachlassend von seiner lebendigen Wirkung!
Sieht man am Hause doch gleich so deutlich, weß Sinnes der Herr sei,
Wie man, das Städtchen betretend, die Obrigkeiten beurteilt.
Denn wo die Türme verfallen und Mauern, wo in den Gräben
Unrat sich häufet, und Unrat auf allen Gassen herumliegt,
Wo der Stein aus der Fuge sich rückt und nicht wieder gesetzt wird,
Wo der Balken verfault, und das Haus vergeblich die neue
Unterstützung erwartet : Der Ort ist übel regieret.

(*b*) Aber da trat herbei der Apotheker behende
Zupfte den geistlichen Herrn und sagte die wispernden Worte:
Hab' ich doch endlich das Mädchen aus vielen hundert gefunden,
Nach der Beschreibung! So kommt und sehet sie selber mit Augen ;

Nehmet den Richter mit Euch, damit wir das Weitere hören.
Und sie kehrten sich um, und weg war gerufen der Richter
Von den Seinen, die ihn, bedürftig des Rates, verlangten.
Doch es folgte sogleich dem Apotheker der Pfarrherr
An die Lücke des Zauns, und jener deutete listig.
Seht Ihr, sagt er, das Mädchen?

(c) Werner. Ich, wie du mich hier siehst! Unsere Vorfahren zogen fleißig wider den Türken, und das sollten wir noch thun, wenn wir ehrliche Kerls und gute Christen wären. Freilich begreife ich wohl, daß ein Feldzug wider den Türken nicht halb so lustig sein kann als einer wider den Franzosen; aber dafür muß er auch desto verdienstlicher sein, in diesem und in jenem Leben. Die Türken haben dir alle Säbels mit Diamanten besetzt.

Just. Um mir von so einem Säbel den Kopf spalten zu lassen, reise ich nicht eine Meile. Du wirst doch nicht toll sein und dein schönes Schulzengericht verlassen?—

(d) v. Tellheim (der sich von dem Fräulein losreißt und der Franziska nachgeht). Nein, Franziska, ich kann nicht die Ehre haben, das Fräulein zu begleiten.—Mein Fräulein, lassen Sie mir noch heute meinen gesunden Verstand und beurlauben Sie mich. Sie sind auf dem besten Wege, mich darum zu bringen. Ich stimme mich, soviel ich kann.—Aber weil ich noch bei Verstande bin, so hören Sie, mein Fräulein, was ich fest beschlossen habe, wovon mich nichts in der Welt abbringen soll.—Wenn nicht noch ein glücklicher Wurf für mich im Spiele ist, wenn sich das Blatt nicht völlig wendet, wenn.—

Das Fräulein. Ich muß Ihnen ins Wort fallen, Herr Major.—Das hätten wir ihm gleich sagen sollen, Franziska. Du erinnerst mich auch an gar nichts.—Unser Gespräch würde ganz anders gefallen sein, Tellheim, wenn ich mit der guten Nachricht angefangen hätte, die Ihnen der Chevalier de la Marlinière nur eben zu bringen kam.

2. Give an account of the doings of the main characters of "Minna" previous to the opening of the play.

3. Discuss Lessing's observance of the unities in "Minna."

4. Reproduce as fully as you can Goethe's comments on "Minna."

5. Analyse the character of Tellheim.

6. Whence did the German play-wrights obtain models for the *bürgerliches Trauerspiel* and the *rührende Komödie?* What relation does "Minna" bear to the latter class of composition? Mention one of Lessing's plays which belongs to the former class.

7. State somewhat fully what you know about Lessing's recommendation of English literary models to the German nation.

8. Describe Lessing's student life at Leipsic.

9. How are the pronouns of address used in "Minna." Explain the origin of such usage.

10. In what metre is *Hermann und Dorothea* composed? Give other poems in the same metre in German and the classical languages.

GERMAN.

THIRD AND FOURTH YEARS.

THURSDAY, APRIL 15TH :—AFTERNOON, 2 TO 5.

Examiner,.....L. R. GREGOR, B.A., PH.D.

Wallenstein's Lager und Tod, Dichtung und Wahrheit, German Literature.

N.B.—Questions expressed in German are to be answered in German.

1. Translate into English :—

(*a*) Wetter auch! wo Ihr nach uns fragt,
Wir heißen des Friedländers wilde Jagd
Und machen dem Namen keine Schande—
Ziehen frech durch Feindes und Freundes Lande,

Querfeldein durch die Saat, durch das gelbe Korn—
Sie kennen das Holkische Jägerhorn!—
In einem Augenblick fern und nah,
Schnell wie die Sündflut, so sind wir da—
Wie die Feuerflamme bei dunkler Nacht
In die Häuser fähret, wenn Niemand wacht—
Da hilft keine Gegenwehr, keine Flucht,
Keine Ordnung gilt mehr und keine Zucht—

(b) Wallenstein. Dergleichen Stimmen giebt's— Es ist kein Zweifel!
Doch Warnungsstimmen möcht' ich sie nicht nennen,
Die nur das Unvermeidliche verkünden.
Wie sich der Sonne Scheinbild in dem Dunstkreis
Malt, eh' sie kommt, so schreiten auch den großen
Geschicken ihre Geister schon voran,
Und in dem Heute wandelt schon das Morgen.
Es machte mir stets eigene Gedanken,
Was man vom Tod des vierten Heinrichs liest.
Der König fühlte das Gespenst des Messers
Lang' vorher in der Brust, eh' sich der Mörder
Ravaillac damit waffnete. Ihn floh
Die Ruh', es jagt' ihn auf in seinem Louvre,
Ins Freie trieb es ihn! wie Leichenfeier
Klang ihm der Gattin Krönungsfest, er hörte
Im ahnungsvollen Ohr der Füße Tritt,
Die durch die Gassen von Paris ihn suchten—

(c) Wallenstein. Die Treue, sag' ich euch,
Ist jedem Menschen, wie der nächste Blutsfreund,
Als ihren Rächer fühlt er sich geboren.
Der Sekten Feindschaft, der Parteien Wut,
Der alte Neid, die Eifersucht macht Friede,
Was noch so wütend ringt, sich zu zerstören,
Verträgt, vergleicht sich, den gemeinen Feind
Der Menschlichkeit, das wilde Tier zu jagen,
Das mordend einbricht in die sichre Hürde,

Worin der Mensch geborgen wohnt — denn ganz
Kann ihn die eigne Klugheit nicht beschirmen.
Nur an die Stirne setzt' ihm die Natur
Das Licht der Augen, fromme Treue soll
Den bloßgegebnen Rücknen ihm beschützen.

(*d*) Der Königslieutenant hatte sogleich befohlen, den Vater auf die Wache zu führen. Die Subalternen wußten wohl, daß ihm niemals zu widersprechen war; doch hatten sie sich manchmal Dank verdient, wenn sie mit der Ausführung zauderten. Diese Gesinnung wußte der Gevatter Dolmetsch, den die Geistesgegenwart niemals verließ, aufs lebhafteste bei ihnen rege zu machen. Der Tumult war ohnehin so groß, daß eine Zögerung sich von selbst versteckte und entschuldigte. Er hatte meine Mutter herausgerufen und ihr den Adjutanten gleichsam in die Hände gegeben, daß sie durch Bitten und Vorstellungen nur einigen Aufschub erlangen möchte. Er selbst eilte schnell hinauf zum Grafen, der sich bei der großen Beherrschung seiner selbst sogleich ins innere Zimmer zurückgezogen hatte und das dringendste Geschäft lieber einen Augenblick stocken ließ, als daß er den einmal in ihm erregten bösen Mut an einem Unschuldigen gefühlt und eine seiner Würde nachteilege Entscheidung gegeben hätte.

3. Geben Sie den Inhalt eines der groszen Schiller'schen Dramen an.

4. Beschreiben Sie Schiller's Verhältnis zu dem Herzog Eugen von Würtemberg, (*oder*) zu Frau von Wolzogen, (*oder*) zu dem Advokaten Körner.

5. Welchen Einflusz hat Schiller's Auffassung der griechischen Tragödie auf den Charakter des Titelhelden in "Wallenstein" ausgeübt (*oder*)?

Geben Sie sämmtliche Abweichungen von der Geschichte in "Wallenstein" an.

6. Führen Sie einige Beispiele der tragischen Ironie in "Wallenstein" an.

7. Was wissen Sie von der Entstehung der Freundschaft zwischen Goethe und Schiller (*oder*).

Analyse the character of Gordon.

8. Geben Sie den Inhalt von Goethe's Werther, (*oder*) von Götz von Berlichingen an.

9. Beschreiben Sie Goethe's grosze italienische Reise. (*oder*) Welchen Einflusz hat die italienische Reise auf seine poetische Entwickelung ausgeübt?

HONOUR EXAMINATION IN GERMAN.

MARCH 31ST:—MORNING, 9 TO 1.

Examiner,..... L. R. GREGOR, B.A., PH.D.

SUBJECTS: Goethe's Torquato Tasso, Schiller's Maria Stuart, Scheffel's Trompeter von Säkkingen, German Composition.

N.B.—Questions expressed in German are to be answered in German.

1. Translate in the *Trompeter*:
   (*a*) *Erstes Stück*: 's war im März.... (25 lines.)
   (*b*) *Neuntes Stück*: In der Früh.... (40 lines).

2. Erläutern Sie die folgenden Ausdrücke:
   (*a*) Schwarzwaldlied, (*b*) Gott zum Grusz, (*c*) helvetischen Nachbarlands, (*d*) corpus juris, (*e*) klagend im Adagio, (*f*) Die Klingen bindet, (*g*) Pfalzgrafenschlosz, (*h*) Deutschordensherren, (*i*) Schaffhauser Felsen, (*j*) Das fremdland'sche Rauchkraut, (*k*) kredenzte (*l*) Zauberhorn des Hüon.

3. Translate in *Maria Stuart*
   (*a*) Act 1, Scene 7, Ich höre staunend..... (25 lines).
   (*b*) Act 3, Scene 4, Womit soll ich den Anfang machen..... ..... (19 lines),

4. Geben Sie den Inhalt des letzten Akts der Maria an.

5. Translate in Tasso
   (*a*) Act I., Scene 4, Und sie hat wohlgethan..... ....mäszig hält.

6. Erläutern Sie ausführlich die Beziehungen
(*a*) Tassos zu dem Antonio,
oder.
(*b*) Tassos zu der Prinzessin, indem Sie dieselben mit Goethe's eigenen Erfahrungen an dem Weimarer Hofe vergleichen.

7. Translate into German (from Horning):
One morning in winter, it was the month of January, I was sitting in my study, busied with my work, when I heard a knock at the door. On opening it there stood before me a little boy clothed in rags, looking half frozen and famished. No kind-hearted man can bear to see a child suffering from hunger and cold, so I brought him into the warm kitchen at once, and, setting him before the fire to warm himself, I ordered the servant to get him food. It was sad to see the large brown eyes looking so eagerly at the meat and other food she brought; and still more, to see him literally swallowing whole with a famished air all that was set before him. After having eaten his fill he began to talk. Born in Italy, his dark complexion and large brown eyes had already betrayed that, he had come to America with his parents, hoping like them to grow rich in that wonderful country.

HONOUR EXAMINATION IN GERMAN.

SATURDAY, 3RD APRIL:—9 TO 12 A.M.

Examiner,.....L. R. GREGOR, B.A., PH.D.

Nathan der Weise, Lessing's Laokoon.

N.B.—Questions expressed in German are to be answered in German.

1. Translate in "Nathan der Weise."
(*a*) Act 1, Scene 2, Wie? Weil es ..... seinen Dolch.
(*b*) Act 3, Scene 4, Hier bringt..... obendrin.

2. Warum ist Lessings Nathan metrisch von so groszer Bedeutung?

3. Beschreiben Sie den theologischen Streit, der den "Nathan" veranlaszte.

4. Erläutern Sie die folgenden Worte: "Nathan der Weise das Hohelied der Toleranz." Ist Lessing gegen das Christentum gerecht?

5. Was wissen Sie über die historischen Quellen des "Nathan"?

6. Translate in "Laokoon"
(*a*) Chap. III., Ferner. Erhält.....auszundrücken.
(*b*) Chap. VIII., Von der Ähnlichkeit .....konnte.

7. Wodurch wurde Lessing zum "Laokoon" angeregt?

8. Welches sind nach Lessing die Hauptunterschiede der bildenden und der redenden Künste?

9. Nennen Sie Lessing's bedeutendste kritisch—theoretische Schriften.

10. Was sagt Lessing über Gottsched's Einfluss auf die deutsche Bühne? Welche Richtung hat Lessing dem deutschen Geschmack gegeben?

HONOUR EXAMINATION IN GERMAN.

THURSDAY, APRIL 8TH :—MORNING, 9 TO 12.

Examiner,..... .....L. R. GREGOR, B.A., PH.D.

WILHELM TELL, DIE JUNGFRAU VON ORLEANS, DIE HARZREISE.

N.B. Questions expressed in German are to be answered in German.

1. Translate in *Die Jungfrau*, Act IV., Scene I. Die Waffen ..... verhehlen.

2. Translate in *W. Tell*, Act II., Scene I. Lerne dieses ..... Deinen.

3. Translate in *Die Harzreise* Das ist die schmutzigste ..... in die einsame Nacht.

4. Discuss the legendary character of Tell's famous performance with the bow, *or* Describe the historical development of the independence of Switzerland.

5. Welche historischen Quellen hat Schiller zu "Tell" benutzt?

6. Vergleichen Sie "Tell" mit einem Drama aus Schiller's erster Periode, und erklären Sie die grundverschiedene Behandlung desselben Themas in beiden Werken.

7. Beschreiben Sie Heine's Studentenleben, (oder) seinen Pariser Aufenthalt.

8. Erläutern Sie die folgenden Stellen, und Redensarten.

(*a*) Alle die Vandalen, Friesen, u.s.w., die noch heutzutage in Göttingen hordenweis und geschieden durch Farben der Mützen, u.s.w. (*b*) die ergötzlichen Blocksberggeschichten. (*c*) Kodex palimpsestus. (*d*) Philiströse und burschikos.

HONOUR EXAMINATION IN GERMAN.

B.A. AND THIRD YEAR.

MONDAY, APRIL 12TH:—MORNING, 9 TO 12.30.

Examiner,.....L. R. GREGOR, B.A., PH.D.

DAS NIBELUNGENLIED, BEHAGHEL'S DEUTSCHE SPRACHE, KLUGE'S DEUTSCHE LITTERATURGESCHICHTE.

N.B. Questions expressed in German are to be answered in German.

1. Translate into modern German:

Ein rîchiu küneginne, frou Uote ir muoter hiez
ir vater der hiez Dancrât, der in diu erbe liez
sît nâch sîme lebene, ein ellens rîcher man,
der ouch in siner jugende grôzer êren vil gewan.

Die drîe künege wâren, als ich gesaget hân
von vil hôhem ellen; in wâren undertân
ouch die besten recken, von den man hât gesaget,
starc und vil küene, in scarpfen strîten unverzaget.

2. Erklären Sie ausführlich das Versmasz des Nibelungenlieds

3. Was wissen Sie von dem früheren Verhältnis Siegfrieds zur Kriemhild?

4 Geben Sie den Inhalt des zweiten Teils des Nibelungenlieds an.

5. Was ist die Bartsch'sche Ansicht über das Handschriftenverhältnis?

6. Welche Rolle spielt Otfried in der Entwickelung der Dichtkunst? Nennen Sie die bedeutendsten christlichen Gedichte, welche das neunte Jahrhundert aufzuweisen hat.

7. Erwähnen Sie die verschiedenen Sagenkreise, welche sich der Völkerwanderung anschlieszen.

8. Wie verhält sich das Mitteldeutsche zu der zweiten Lautverschiebung?

9. Was wissen Sie von der Entstehung der neuhochdeutschen Schriftsprache aus den Mundarten?

10. Führen Sie Beispiele der Nachwirkungen an, welche die germanischen Sprachen in den romanischen zurückgelassen haben.

HEBREW.

FIRST YEAR.

THURSDAY, APRIL 1ST :—9 TO 12 A.M.

Examiner,..... .....D. COUSSIRAT, B.A., B.D., D.D., [OFFICIER d'ACADEMIE.

1. Translate :—

וַיֹּאמֶר אֱלֹהִים יְהִי מְאֹרֹת בִּרְקִיעַ הַשָּׁמַיִם לְהַבְדִּיל בֵּין הַיּוֹם וּבֵין הַלָּיְלָה וְהָיוּ לְאֹתֹת וּלְמוֹעֲדִים וּלְיָמִים וְשָׁנִים: וְהָיוּ לִמְאוֹרֹת בִּרְקִיעַ הַשָּׁמַיִם לְהָאִיר עַל־הָאָרֶץ וַיְהִי־כֵן:

(*a*) Give the singular of the plural nouns in that section.

(*b*) Parse the verbs.

(*c*) Explain the change of — to —, and of — to — when it occurs.

(*d*) Render into Hebrew :—To divide between the day and between the night.

2. Translate :—

וַיִּיצֶר יְהוָה אֱלֹהִים אֶת־הָאָדָם עָפָר מִן־הָאֲדָמָה וַיִּפַּח בְּאַפָּיו נִשְׁמַת חַיִּים וַיְהִי הָאָדָם לְנֶפֶשׁ חַיָּה: וַיִּטַּע יְהוָה אֱלֹהִים גַּן־בְּעֵדֶן מִקֶּדֶם וַיָּשֶׂם שָׁם אֶת־הָאָדָם אֲשֶׁר יָצָר:

(*a*) Parse and analyze (1) וַיִּיצֶר. (2) וַיִּטַּע. (3) נִשְׁמַת.

(*b*) What are the three verbs used in Genesis to express creation?

(*c*) Mention three forms of Segholates.

(*d*) What is meant by assimilation in Hebrew?

(*e*) Render into Hebrew :—And God breathed into the nostrils of the man.

3. Translate :—

וַיֹּאמֶר יְהוָה אֱלֹהִים הֵן הָאָדָם הָיָה כְּאַחַד מִמֶּנּוּ לָדַעַת טוֹב וָרָע וְעַתָּה פֶּן־יִשְׁלַח יָדוֹ וְלָקַח גַּם מֵעֵץ הַחַיִּים וְאָכַל וָחַי לְעֹלָם: וַיְשַׁלְּחֵהוּ יְהוָה אֱלֹהִים מִגַּן־עֵדֶן לַעֲבֹד אֶת־הָאֲדָמָה אֲשֶׁר לֻקַּח מִשָּׁם:

(*a*) Analyze the form מִמֶּנּוּ.

(*b*) Parse (1) לָדַעַת. (2) וָחַי. (3) לַעֲבֹד.

(*c*) What is the use of וְ consecutive?

(*d*) Distinguish between an ordinary and an apocopated form.

(*e*) Render into Hebrew:—The man knew good and evil.

4. Give a tabular view of פָּקַד in Niphal, Piel and Hiphil.

5. Inflect the Hiphil perfect of בָּדַל.

6. Point and translate :— ויברך את יום השביעי ויקדש אתו כי בו שבת מכל מלאכתו אשר ברא אלהים לעשות.

7. Reading.

HEBREW.

INTERMEDIATE EXAMINATION.

THURSDAY, APRIL 1ST :—MORNING, 9 TO 12.

Examiners,..... { D. COUSSIRAT, B.A., B.D., D.D., [OFFICIER d'ACADEMIE. REV. A. T. LOVE, B.A., B.D.

[N.B.—Students of McGill will not answer question 2. Students of Morrin College will not answer questions 6, 7 and 8.]

1. Translate :—

הַנְּפִלִים הָיוּ בָאָרֶץ בַּיָּמִים הָהֵם וְגַם אַחֲרֵי־כֵן אֲשֶׁר יָבֹאוּ בְּנֵי הָאֱלֹהִים אֶל־בְּנוֹת הָאָדָם וְיָלְדוּ לָהֶם הַמָּה

הַגִּבֹּרִים אֲשֶׁר מֵעוֹלָם אַנְשֵׁי הַשֵּׁם׃ פ וַיַּרְא יְהוָה כִּי רַבָּה רָעַת הָאָדָם בָּאָרֶץ וְכָל־יֵצֶר מַחְשְׁבֹת לִבּוֹ רַק רַע כָּל־הַיּוֹם׃

(*a*) Parse the words marked.*

(*b*) Explain the construction בַּיָּמִים הָהֵם.

(*c*) Write the Niphal, Piel and Hiphil Imperfect of ע״ו, ע״י and ל״ה verbs.

(*d*) Inflect נָתַן in the Kal Imperfect.

(*e*) Explain the daghesh in בִּי.

2. Translate :—

וַיְשַׁלַּח אֶת־הָעֹרֵב וַיֵּצֵא יָצוֹא וָשׁוֹב עַד־יְבֹשֶׁת הַמַּיִם מֵעַל הָאָרֶץ׃ וַיְשַׁלַּח אֶת־הַיּוֹנָה מֵאִתּוֹ לִרְאוֹת הַקַּלּוּ הַמַּיִם מֵעַל פְּנֵי הָאֲדָמָה׃ וְלֹא־מָצְאָה הַיּוֹנָה מָנוֹחַ לְכַף־רַגְלָהּ וַתָּשָׁב אֵלָיו אֶל־הַתֵּבָה כִּי מַיִם עַל־פְּנֵי כָל־הָאָרֶץ וַיִּשְׁלַח יָדוֹ וַיִּקָּחֶהָ וַיָּבֵא אֹתָהּ אֵלָיו אֶל־הַתֵּבָה׃

(*a*) Parse the words marked.*

(*b*) Write a note on וַיֵּצֵא יָצוֹא וָשׁוֹב.

(*c*) Inflect יָם in the singular and plural.

(*d*) How are the numerals from eleven to nineteen formed? Write the numbers thirteen and seventeen.

(*e*) Describe the five classes into which nouns may be divided for purposes of inflection, and give an example of each.

3. Translate :—

שְׁבִיעִי עַמִּים יְרַנְּנוּן חֵיל אֶחָז וְשִׁבְעֵי פְלִשְׁת׃ אָז נִבְהֲלוּ

אֲלוּפֵי אֱדוֹם אֵילֵי מוֹאָב *יֹאחֲזֵמוֹ רָעַד נָמֹגוּ כֹּל יֹשְׁבֵי
כְנָעַן: *תִּפֹּל עֲלֵיהֶם אֵימָתָה וָפַחַד בִּגְדֹל *זְרוֹעֲךָ *יִדְמוּ
כָּאֶבֶן עַד־ יַעֲבֹר עַמְּךָ יְהוָה עַד־יַעֲבֹר עַם־*זוּ קָנִיתָ:

(*a*) Parse the words marked.*
(*b*) Inflect the Niphal Perfect of מוּג.
(*c*) Inflect the Hiphil Imperfect of נָפַל.
(*d*) Inflect רֶגֶל in the singular, and דָּבָר in the plural.

4. Translate into Hebrew:—(1) Three sons and three daughters. (2) King of righteousness. (3) Who did establish a covenant with thee? (4) Noah was six hundred years old. (5) Remember thou the days in which God blessed thee.

5. Point and translate:— ויגברו המים על הארץ חמשים ומאת יום.

6. What is the Masorah?

7. Explain the use of the Parashah and the Haphtarah.

8. Point, translate and parse (1) חזק (2) דספר (3) חציו (4) פרשיותיו (5) סימן (6) סדריו (7) מניין.

HEBREW.

ORDINARY B.A.

THURSDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER d'ACADEMIE.

1. Translate Job 3, 3 to 8 inclusive.

יֹאבַד יוֹם אִוָּלֶד בּוֹ וְהַלַּיְלָה אָמַר הֹרָה גָּבֶר: הַיּוֹם
הַהוּא יְהִי חֹשֶׁךְ אַל־יִדְרְשֵׁהוּ אֱלוֹהַּ מִמָּעַל וְאַל־תּוֹפַע

עָלָיו נִהְרָה: יִגְאֲלֻהוּ חֹשֶׁךְ וְצַלְמָוֶת תִּשְׁכָּן־עָלָיו עֲנָנָה
יְבַעֲתֻהוּ כְּמְרִירֵי יוֹם: הַלַּיְלָה הַהוּא יְקָחֲהוּ אֹפֶל
אַל־יַחֵד בִּימֵי שָׁנָה בְּמִסְפַּר יְרָחִים אַל־יָבֹא: הִנֵּה הַלַּיְלָה
הַהוּא יְהֵי גַלְמוּד אַל־תָּבוֹא רִנָּנָה בּוֹ: יְקָבְהוּ אֹרְרֵי־יוֹם
הָעֲתִידִים עֹרֵר לִוְיָתָן:

(*a*) Write the פ״א verbs, and state their peculiarities.

(*b*) Explain the forms הָרָה and תּוֹפַע.

(*c*) Comment on צַלְמָוֶת and לִוְיָתָן.

(*d*) Inflect the Kal Imperfect of בּוֹא.

(*e*) What is the probable date of the book of Job?

2. Translate Malachi 2, 10 to 13 inclusive.

הֲלוֹא אָב אֶחָד לְכֻלָּנוּ הֲלוֹא אֵל אֶחָד בְּרָאָנוּ מַדּוּעַ
נִבְגַּד אִישׁ בְּאָחִיו לְחַלֵּל בְּרִית אֲבֹתֵינוּ: בָּגְדָה יְהוּדָה
וְתוֹעֵבָה נֶעֱשְׂתָה בְיִשְׂרָאֵל וּבִירוּשָׁלִַם כִּי־חִלֵּל יְהוּדָה
קֹדֶשׁ יְהוָה אֲשֶׁר אָהֵב וּבָעַל בַּת־אֵל נֵכָר: יַכְרֵת יְהוָה
לָאִישׁ אֲשֶׁר יַעֲשֶׂנָּה עֵר וְעֹנֶה מֵאָהֳלֵי יַעֲקֹב וּמַגִּישׁ
מִנְחָה לַיהוָה צְבָאוֹת: וְזֹאת שֵׁנִית תַּעֲשׂוּ כַּסּוֹת דִּמְעָה
אֶת־מִזְבַּח יְהוָה בְּכִי וַאֲנָקָה מֵאֵין עוֹד פְּנוֹת אֶל־הַמִּנְחָה
וְלָקַחַת רָצוֹן מִיֶּדְכֶם:

(*a*) Parse the verbs and nouns of Verse II.

(*b*) Explain the form בְּרָאָנוּ.

(*c*) What is the union vowel of the suffixes joined to the Imperfect of verbs?

(*d*) What is the root of יְהוּדָה?

(*e*) What are the peculiarities of פ״נ verbs in the Kal?

(*f*) Inflect the Niphal perfect of לָקַח.

(*g*) Comment on the name and style of מַלְאָכִי.

3. Translate psalm 45, 1 to 6 inclusive.

לַמְנַצֵּחַ עַל־שֹׁשַׁנִּים לִבְנֵי־קֹרַח מַשְׂכִּיל שִׁיר יְדִידֹת׃ רָחַשׁ
לִבִּי ׀ דָּבָר טוֹב אֹמֵר אֲנִי מַעֲשַׂי לְמֶלֶךְ לְשׁוֹנִי עֵט ׀ סוֹפֵר
מָהִיר׃ יָפְיְפִיתָ מִבְּנֵי אָדָם הוּצַק חֵן בְּשִׂפְתוֹתֶיךָ עַל־כֵּן
בֵּרַכְךָ אֱלֹהִים לְעוֹלָם׃ חֲגֹר חַרְבְּךָ עַל־יְרֵךְ גִּבּוֹר
הוֹדְךָ וְהַדָּרְתֶּךָ׃ וַהֲדָרְךָ ׀ צְלַח רְכַב עַל־דְּבַר־אֱמֶת
וְעַנְוָה־צֶדֶק וְתוֹרְךָ נוֹרָאוֹת יְמִינֶךָ׃ חִצֶּיךָ שְׁנוּנִים עַמִּים
תַּחְתֶּיךָ יִפְּלוּ בְּלֵב אוֹיְבֵי הַמֶּלֶךְ׃

(*a*) Write explanatory notes on:—לַמְנַצֵּחַ, שֹׁשַׁנִּים, קֹרַח, מַשְׂכִּיל.

(*b*) What is the primary meaning of רָחַשׁ?

(*c*) Inflect מָוֶת in the singular.

(*d*) To what event does psalm 45 refer?

4. Point and translate:—סכום פסוקי איוב אלף ושבעים. וסדריו שמונה. וסימנו אהב ה׳ שערי ציון.

5. Translate into Hebrew:—(1) The land upon which thou art lying, to thee will I give it. (2) And this one said so, and that one said so. (3) If I find fifty righteous.

6. State the principles of Syntax illustrated by the preceding sentences.

7. Give a classification of the Semitic languages.

8. How and by whom was deciphered the cuneiform writing?

9. State briefly the contents of the Inscription of Mesha.

THE NEIL STEWART PRIZE.

TRANSLATION.

THURSDAY, 15TH APRIL:—MORNING, 9 TO 12.

Examiner,..... .....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

1. Translate literally Exodus 34, v. 18–25 and 32–35 inclusive.

(*a*) Parse irregular verbs and nouns in v. 32 to 35.

(*b*) Names of the Hebrew months and the corresponding months in English.

(*c*) How does the Vulgate translate קרן ?

(*d*) What is known of the Pharaoh of the oppression ?

2. Translate literally Isaiah 45, 1-7 inclusive.

(*a*) Comment on רד (v.1.), אושר (v.2), אכנך and אאזרך (v.4, 5).

(*b*) Write a note on Cyrus as he is known in the Bible and in the Assyrian inscriptions.

3. What is the relation of the second part of Isaiah to the first as to style?

4. Point and parse the Masoretic note found at the end of the Book of Exodus.

THE NEIL STEWART PRIZE.

HEBREW GRAMMAR.

THURSDAY, APRIL 15TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

1. Add the suffixes me, thee, him, her, us, you, them, to קטל in the Kal perfect, imperfect, infin., imperat. and in the Piel perf.

2. Synopsis of סבב on Niphal, Hiphil and Hophal.

3. Inflect the Hiphil perf. and the Niphal imperf. of קום.

4. Characteristics of ל״ה verbs.

5. Classify the masculine and feminine nouns.

6. Inflect שם.

7. State the rules of the numerals from two to ten, from eleven to nineteen, from twenty to ninety, for one hundred and one thousand.

8. How may the protasis of a conditional sentence be introduced in Hebrew?

B.A. HONOURS.

HISTORY AND LITERATURE OF THE SEMITIC LANGUAGES.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner.....D. COUSSIRAT, B.A., B.D., D.D.
OFFICIER D'ACADÉMIE.

1. A table of the Semitic languages in a scientific order.

2. Point out the main features of: (1) East Aramaic; (2) Syriac; (3) Samaritan; (4) Old Phœnician; (5) Rabbinic.

3. Write on the Literature of the above-mentioned Languages or Dialects.

4. State where and by whom some of the Semitic languages are now spoken.

5. Name the different parts of the Mishna, and state their general contents.

6 What is the nature of the Assyrian Alphabet?

7. Describe the inscription of Shalmaneser on the rocks oi Armenia;—or the Cylinder of Cyrus.

HONOUR EXAMINATIONS.

THIRD YEAR.

HEBREW.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D.
OFFICIER D'ACADEMIE.

1. Translate Genesis XXIV., 61–67 inclusive.

(*a*) Parse and analyze every word in verse 61, giving also the names of accents and stating their use.

(*b*) Meaning of the proper names in that section.

(*c*) Describe the marriage ceremonies at Isaac's time in his tribe.

2. Translate Isaiah LXVI., 15–19 inclusive.

(*a*) Synopsis of שׁוּב in Hiphil.

(*b*) Inflect מַעֲשֶׂה in the singular and plural.

(*c*) Write explanatory notes on Tarshish, Pul, Lud, Javan, the Isles afar off.

(*d*) Comment on the style of Isaiah 40–66.

3. Translate Ecclesiastes V., 1–8 inclusive.

(*a*) Point out the Aramaic forms and words found in that section.

(*b*) Write a note on שְׁגָגָה

(*c*) Give the different renderings of verse 8.

4. Point, parse and translate the Masoretic notes at the end of Ecclesiastes.

5. Explain the name of קֹהֶלֶת and criticize its ordinary translation.

B.A. HONOURS.

TRANSLATION AT SIGHT AND HEBREW COMPOSITION.

THURSDAY, APRIL 15TH :—2 TO 5 P.M.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

1. Translate at sight and literally Ezechiel VIII, 1-7 inclusive.

2. Translate into Hebrew :—We give thanks to Jehovah, for he is good; forever is his mercy. He is the God of gods, the Lord of lords, he does wondrous works in the Heaven and in the earth; he made great lights, the Sun for the ruling of the day, the Moon and Stars for the ruling of the night; and he chose Israel his people among the nations to serve him and to repeat every day the confession of the Unity of God; Hear, O Israel, Jehovah thy God is the only God. Deliver us, O Jehovah, from the evil man, who sharpens his tongue like a serpent. Thou art my God, give ear to the voice of my supplications, and I will praise Thy name for ever.

HONOUR EXAMINATIONS.

THIRD YEAR.

HEBREW COMPOSITION AND TRANSLATION AT SIGHT.

THURSDAY, APRIL 15TH :—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

1. Translate at sight, and literally, Zechariah, I., 1–6, inclusive.

2. Translate into Hebrew : The children of Israel observed the month, of Abib, and kept the passover unto the Lord their God, for in the month of Abib the Lord brought them forth out of Egypt by night. And they sacrificed the passover in the place which the Lord chose to inhabit. They did not eat leavened bread with it, for they came forth out of the land of Egypt in haste. They were commanded to eat unleavened bread six days, and the seventh day there was a solemn assembly to the Lord their God. They observed also the feast of the tabernacles seven days, after they had gathered in their corn and their wine. And they rejoiced in their feast, they and their sons, and their daughters, and their servants, and the Levites, and the stranger, and the orphan, and the widow who were within their gates.

B.A. HONOURS.

SEMITIC LANGUAGES.

WRIGHT'S COMPARATIVE GRAMMAR.

WEDNESDAY, APRIL 14TH :—MORNING, 9 TO 12.

Examiner.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

Write briefly on the following subjects:—

1. Founders of Semitic philology.
2. Babylonian and Assyrian dialects.
3. Arabic dialect.
4. Relation of the Semitic Languages to the Indo-European.
5. Old Hebrew Alphabet of the Siloam inscription.
6. Changes undergone by the weak letters ו and י.
7. The original vowel-system.

8. The definite article.

9. Broken plurals.

10. The passive forms in Arabic, Hebrew and Aramaic.

THIRD YEAR HONOURS.

SAYCE, ANCIENT BABYLONIANS.

WEDNESDAY, APRIL 21ST :—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE,

Write on the following subjects :—

1. Earlier culture of pre-Semitic Chaldæa.

2. The sacrifices of the Babylonians and Assyrians.

3. The first religion of Babylonia.

4. Religion of the upper classes and that of the masses.

5. The origin of the world, according to the Babylonians.

6. Cyrus, from inscription on clay cylinder.

7. The god Ea.

8. The goddess Istar.

9. Library of Niniveh and its contents.

10. Literature of Babylonia.

THIRD YEAR HONOURS.

LENORMANT'S BEGINNINGS OF HISTORY.

FRIDAY, APRIL 23RD :—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

Write on the following subjects :—

1. Conception of the autochthony of the first men among the ancients.

2. Various original versions that have come down to us of the Chaldæo-Assyrian Genesis.

3. Original sin in the beliefs of Zoroastrianism.

4. The Kerubim.

5. The fratricide of the Cabiri.

6. Song of Lemek.

7. Theory of Oppert upon the figures of antediluvian genealogies in the Bible.

8. The gibborim and the nephilim.

9. The chaldæan account of the Deluge discovered by G. Smith.

10. In what sense the universality of the tradition of the Deluge should be understood.

B. A. AND THIRD YEAR HONOURS.

SYRIAC.

WEDNESDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D. OFFICIER D'ACADÉMIE.

1. Translate Jonah II, 2–9 inclusive.

(*a*) Parse fully the weak verbs in verses 5 and 6.
(*b*) Is the translation of Jonah generally literal? Give two or three examples of different readings.

2. Translate Malachi III, 7-12.

(*a*) Parse the irregular nouns.
(*b*) State the principles of Syntax applied in that section.

3. Translate Matthew XXVII, 45-50.

(*a*) Give the rules of the numerals in Syriac.

(*b*) Is this passage a literal translation from the Greek?

4. Synopsis of *Remo* in Peal and Aphel.

5. Inflect *Soĥed* in the singular and plural.

6. Write the forms of *Iahb* in peal perf., imperat., imperf., participle and Infinitive.

7. Translate into Syriac: (1) Ye shall be baptized with water and with the Spirit, which brooded over the face of the waters when God created the heavens and the earth and all which was in them. (2) God has forsaken you because you forsook him. (3) God will bless you if ye follow him and serve him.

8. Write a note on the use of Syriac concerning the text of the Old and New Testaments.

B.A. HONOURS.

HEBREW.

WEDNESDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiner,.....D. COUSSIRAT, B.A., B.D., D.D., OFFICIER D'ACADÉMIE.

1. Translate literally Malachi 2, 14-17 inclusive.
   (*a*) To whom does אַחַר refer?
   (*b*) Paraphrase that section.
   (*c*) Explain the mnemonic word יִתְקַק

2. Translate literally Job 37, 1-10 inclusive.
   (*a*) Parse fully verse 6.
   (*b*) What objections are made to the speech of Elihu?
   (*c*) What are the opinions entertained on the historicity of Job?

3. Translate literally Psalm 51.
   (*a*) Discuss its authorship.
   (*b*) Write grammatical, critical and short exegetical notes on that psalm.

NATURAL SCIENCE.

FACULTY OF ARTS.

SECOND YEAR.

SESSIONAL EXAMINATIONS.

BOTANY.

THURSDAY, APRIL 15TH:—9 TO 12 A.M.

Examiner,.....D. P. PENHALLOW, M.A.Sc.
Assistant Examiner,.....C. M. DERICK, M.A.

1. Give a concise account of the principal methods of plant dispersion.

2. Show what elements (*a*) enter into the ash of plants, and (*b*) are lost during combustion. From what sources are these various elements derived?

3. Describe fully the function of transpiration, and show how it is controlled by structural adaptations.

4. Give a concise account of the source of carbon in plants, and the process by which it is taken up.

5. Describe the structure of a leaf, in full.

6. Explain the significance of reversion in a flower, and cite specific cases.

7. Describe the composition and purpose of a bud.

(*a*) At what time of the year is a bud completed?
(*b*) How is it protected during the winter?
(*c*) What are latent buds?

8. Give an account of the general causes of movement in the sap of plants, and show what general changes it undergoes.

9. Describe the structure of a root at the growing end.

10. What are the essential differences of constructive and destructive metabolism? What specific function represents the latter?

THIRD YEAR.

SESSIONAL EXAMINATIONS.

BOTANY.

THURSDAY, APRIL 8TH :—9 TO 12 A.M.

Examiner, ... D. P. PENHALLOW, M.A.Sc.
Assistant Examiner, ... C. M. DERICK, M.A.

1. State what effects are produced when an object is viewed with a lens having chromatic error, and with one having spherical error.

2. Give a method of determining the amplification of a microscope.

3. Enumerate the principal kinds of plastids found in plants; indicate their chief differences, and show to what group of chemical bodies they belong.

4. Crystals are observed in (*a*) the potato, and (*b*) the skin of the onion. What is the chemical character of each? Give tests to prove the nature of the crystal.

5. Describe the physical characteristics of starch. Describe its behaviour under the action of potash and also of sulphuric acid. Give a distinguishing test.

6. Describe the occurrence of tannin in plants, and show what tests distinguish it.

7. Describe the structure and growth of a closed collateral bundle.

8. Give a concise account of the characteristics of the fundamental system of tissues, and indicate the principal forms.

9. Describe the structure of a leaf, as in *Ficus elastica*.

10. Explain what is meant by cutinization; show when and under what circumstances such modification occurs, and give a distinctive test.

11. Describe fully the structural peculiarities of the sieve-plate as seen in *Cucurbita pepo*.

12. Give a full account of the structure of a medullary ray, as found in *Pinus strobus*.

FOURTH YEAR.

SESSIONAL EXAMINATIONS.

BOTANY.

SATURDAY, APRIL 24TH :—MORNING, 9 TO 12.

Examiner,.....D. P. PENHALLOW, M.A.Sc.
Assistant Examiner,.....C. M. DERICK, M.A.

1. Describe the sporophyte in *Selaginella cæsia*.

2. Give a description of the structure of the stem in *Equisetum hiemale*.

3. Describe the structure and modifications of the sporangium in the Filicineæ.

4. Discuss apogamy and apospory, giving the names of plants in which the phenomena have been observed.

5. Give an account of the sporophyte of *Mnium*.

6. Describe the structure of the thallus in *Marchantia polymorpha*. In what particulars does this plant differ from typical *Hepaticæ*?

7. Trace the life history of *Puccinia graminis*.

8. What is meant by symbiosis? Give a short account of a plant illustrating this.

9. Write a description of *Rhizopus stolonifer*.

10. Describe the gametophyte of *Spermathamnion Turneri*.

11. Give a brief account of the method of reproduction in *Laminaria saccharina*.

12. (*a*) How is increase in length effected in the cells of *Œdogonium*?
(*b*) Describe the reproductive process in *Spirogyra*.

13. What are the principal characteristics of the Cyanophyceæ? Distinguish between the families of this group.

FIRST YEAR.

CHEMISTRY.

WEDNESDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiners, ... { P. J. HARRINGTON, M.A., PH.D.
NEVIL NORTON EVANS, M.A. Sc.

1. What are crystals? In what ways are they formed? Explain their classification into systems.

2. By whom was Fluorine first isolated? Describe the method employed.

3. How many grams of Iron Sulphide would you require to make 50 liters of Hydrogen Sulphide at standard temperature and pressure?

4. Give the names and composition of the different ores of Iron. How is Pig Iron made from them, and how does it differ in composition from Steel and Wrought Iron?

5. State briefly how you would prepare any four of the following: (1) Sodium Hydroxide, (2) Red Phosphorus, (3) Phosphine, (4) Carbon Dioxide, (5) Sulphur Dioxide.

6. When a mixture of Nitre and Charcoal is ignited the following reaction takes place:

$$2\,KNO_3 + 3C = CO_2 + CO + 2N + K_2CO_3$$

Calculate the volume of gases (at 0°C and 760 mm.) which would be produced by burning 5 grams of charcoal with the proportion of Nitre indicated by the equation.

7. How is Sulphuric Acid manufactured? What are its properties?

8. Explain (*a*) the nature of flame as seen in an ordinary candle; (*b*) the principle of the safety-lamp.

9. By what tests would you recognize the element Iodine (*a*) when free, and (*b*) when in combination?

10. Name the metals of the Alkaline Earths. State what you know with regard to any one of them and its compounds.

THIRD YEAR HONOURS IN NATURAL SCIENCE AND THIRD YEAR IN APPLIED SCIENCE (*Mining and Chemistry Courses*).

MINERALOGY.

WEDNESDAY, APRIL 21ST :—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, M.A., PH.D. / F. D. ADAMS, M.A.SC, PH.D.

1. Distingush between faces of parting and cleavage in minerals, and state what you know with regard to the cleavages of the following species :—Sphalerite, Stibnite, Galena, Diamond, Fluorite.

2. Explain carefully the cause of the brilliancy of such minerals as Diamond and Anglesite.

3. What are pseudomorphs, and in what ways are they produced? Distinguish between a pseudomorph and a paramorph.

4. Explain the terms parameter, zone, brachydome, hemi-orthodome, twinning-plane, composition-face.

5. What are the principal irregular forms and imitative shapes of minerals? Describe them briefly.

6. Crystals are liable to show many surface and internal imperfections. State the more ordinary ones and discuss their causes.

7. Explain how by different methods of selection of planes three different hemihedral forms may be derived from the hexoctahedron.

8. What are the leading characteristics of the monoclinic system? Explain carefully the notation of the faces.

9. Give brief descriptions of each of the following species :—Argentite, Millerite, Tetrahedrite, Spinel, Manganite.

10. Give the composition, crystalline form, hardness and specific gravity of Bornite, Arsenopyrite, Ruby, Cassiterite, Cuprite, Polianite.

11. Describe two of the crystal models shown, giving symbols for the faces. Name also and describe three of the minerals.

B.A. HONOURS IN NATURAL SCIENCE AND B.A.Sc. (*Chemistry and Mining Courses*).

(*First Paper*)—MINERALOGY.

MONDAY, DEC. 14TH :—MORNING, 9 TO 12.

Examiners,..... ..... { B. J. HARRINGTON, MA., PH.D. / FRANK D. ADAMS, M.A. Sc., PH.D.

1. A mineral gave on analysis the following percentage composition :—Silica 64·96, Alumina 19·40, Lime 0·49, Magnesia 0·25, Potash 12·80, Soda 2·32. Calculate the formula. Name also the species, and describe it and its principal varieties.

2. Calculate the quantivalent ratio and formula of a silicate with the following percentage composition :—Silica 39·66, Titanium Dioxide 0.89. Alumina 14·83, Ferric Oxide 12·37, Ferrous Oxide 1·97, Lime 12·74, Magnesia 14·35, Potash 1·25, Soda 2.47.

3. Describe the orthorhombic crystal whose planes are represented by the following indices :—

[111]	[110]	[021]	[100]
[112]	[210]	[011]	[010]

4. Give the general characters of (*a*) the Feldspars, and (*b*) the Scapolites.

5. How is the chemical constitution of the Micas explained by Clarke ?

6. State what you know with regard to the crystalline form and cleavage of Diamond, Stibnite, Sphalerite, Siderite, Titanite and Apophylite.

7. Give the composition and blowpipe characters of Bornite, Millerite, Pronstite, Limonite, Natrolite. Malachite.

8. Explain each of the following terms :—Tetartohedrism, hemimorphism, polysilicate, basic water, centrosymmetry, optic axial plane.

9. Give concise descriptions of each of the following species :—Arsenopyrite, Chromite, Zircon, Tourmaline, Wolframite.

10. Give a stereographic projection of one of the crystals exhibited.

11. What are the chief characteristics of triclinic crystals ? Explain the notation of the faces.

AFTERNOON, 2 TO 4.

Describe carefully any 20 of the 24 mineral specimens exhibited.

B.A. HONOUR EXAMINATIONS IN GEOLOGY AND NATURAL HISTORY.

(FIRST PAPER) PETROGRAPHY.

THURSDAY, APRIL 8TH:—MORNING, 9 TO 1.

Examiners, ... { B. J. HARRINGTON, M.A., PH.D. / FRANK D. ADAMS, M.AP.SC., PH.D.

1. From a crystal of quartz two sections are cut—the first parallel to oP, the second parallel to ∞ P Describe and explain the optical properties of each when examined under the microscope.—(1) Making use of the lower Nicol alone.—(2) Between crossed Nicols in parallel polarized light —(3) Between crossed Nicols in convergent polarized light.

2. To what group of rocks does the Vesuvian lava of 1873 belong? Describe in detail its microscopical characters and illustrate your descriptions by sketches.

3. Of what igneous rocks is Mount Royal composed? When the volcano was active what lavas did it eject?

4. Write a somewhat detailed description of Andesite, treating of its mineralogical composition, structure and mode of occurrence. Describe a typical Hornblende Andesite as seen under the microscope.

5. Describe fully how Hornblende is distinguished from Pyroxene under the microscope. Illustrate your descriptions by diagrams.

6. Describe briefly the following rocks:—Andalusite hornstone, Syenite, Obsidian, Aplite, Diorite, Pegmatite, also the following structures:—Porphyritic, Ophitic, Microfelsitic, Cataclastic, Schistose.

7. Decribe the changes which take place in a Quartz Orthoclase Hornblende Gneiss when it becomes thoroughly decomposed under the action of the weather.

8. What are Strain Shadows? Explain in detail how these are produced, and state in which class of rocks they are most commonly found.

9. Describe the microscopical characters of Sillimanite. In what rocks does it most commonly occur?

10. Name the fifteen hand specimens. What structures are exhibited by Nos. 13, 14 and 15?

11. Examine the five thin sections under the microscope. State in each case what minerals are present, as well as the name and structure of the rock.

B.A. HONOUR EXAMINATIONS IN GEOLOGY AND NATURAL HISTORY.

(SECOND PAPER) PRACTICAL GEOLOGY.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 1.

Examiners,..... { B. J. HARRINGTON, M.A., PH.D.
FRANK D. ADAMS, M. AP. SC., PH.D.

1. Explain how a geological map is constructed—(1) When a detailed topographical map of the district is available. (2) When the district is unsettled and has not been mapped topographically.

2. Explain how it is often possible from surface indications alone, without boring or digging, to gain accurate information concerning the arrangement of the rocks below ground.

3. Explain the influence of joints and of faults upon the landscape of a country, and also their influence in mining and quarrying.

4. Explain the terms,—Outcrop, Overlap, Unconformability, Dip and Hade.

5. When an igneous mass is found in contact with a bedded deposit, what facts are most important as indicating their relative age?

6. Define the following terms—Ore, Gangue, Slickenside, Country Rock, Chimney, as used in connection with mineral deposits.

7. Explain the origin of the gold found in ancient river channels, as for instance those of California.

8. Describe the ore deposits of Butte, Montana, and show where they belong in the classification of ore deposits adopted.

9. Describe generally the manganese deposits of Arkansas, and explain their origin. To what class of deposits do they belong?

10. Describe the mode of occurrence of the zinc ores of the Bertha Mines, Virginia, and explain their origin.

11. A line AB is drawn across a portion of the Geological Map (**No. 1**) submitted. Construct a horizontal section along this line.

12. Describe "Profil I." (**No. 2**), and state what it teaches concerning the relative age of the several rocks represented.

B.A. HONOR EXAMINATIONS IN GEOLOGY AND NATURAL HISTORY.

(THIRD PAPER) PALÆONTOLOGY.

THURSDAY, APRIL 15TH :—MORNING, 9 TO 1.

Examiners, ... { B. J. HARRINGTON, M.A., PH.D.
FRANK D. ADAMS, M.AP.SC., PH.D.

1. Describe the process by which corals become silicified.

2. Explain how the remains of animals or plants living in inland regions are preserved in the strata of the earth's crust.

3. Why are marine forms of animal life of especial importance to the palæontologist?

4. Describe the *Lithistidæ*. Give three examples with their range.

5. Describe *Tetradium*, *Aulopora*, *Stromatopora*, *Calceola*, *Pentamerus*, *Favosites*. Give the range in each case.

6. State what you know of the *Terebratulidæ*.

7 Describe the parts of a typical Cystidian. Give the characters of any three genera.

8. Describe the parts of a typical Trilobite. Give the characters of *Asaphus*, *Dikellocephalus*, *Trinucleus*, *Agnostus*, and *Homalonotus*, stating in each case the range of the genus.

9. State what you know concerning the organic remains in any series of the Canadian Palæozoic. Point out the zoological or botanical relations of the several forms, and indicate those which are especially characteristic.

10. Refer the specimens exhibited to their geological formations and to their places in the zoological or botanical classification.

B.A. HONOUR EXAMINATIONS IN GEOLOGY AND NATURAL HISTORY.

CANADIAN GEOLOGY.

(FOURTH PAPER)

MONDAY, APRIL 19TH :—MORNING, 9 TO 1.

Examiners,..... ..... { B. J. HARRINGTON, M.A., PH.D. / FRANK D. ADAMS, M.AP. SC., PH.D.

1. Draw a line of section across the Gaspé peninsula from the Gulf of St. Lawrence to mouth of the Cascapedia on the Bay Chaleur, continue it in a south-easterly direction to Minudie on the Bay of Fundy, and then on to the south-west end of the Joggins Section.

2. State what you know of mountain elevation and igneous injection in Canada later than the Palæozoic.

3. State what you know concerning the coal deposits of the Crow's Nest Pass.

4. Draw a line of section from Lachute, through Montreal, St. Helen's Island and Longueuil to Chambly. Describe the several formations represented, and give in the case of each of them some characteristic fossils.

5. State what you know concerning the anorthosites of the Laurentian.

6. Describe the mode of occurrence and the geological relations of the nickel deposits of the Sudbury District.

7. Describe the mode of occurrence and the geological relations of the gold deposits and the gypsum deposits of Nova Scotia.

8. Describe the following formations, stating their geological position, haracteristic fossils and any special points of interest connected with them :—Calciferous, Corniferous, Laramie.

9. What formations in Canada would be indicated by the prevalence of the following genera :—Endoceras, Paradoxides, Columnaria, Tetradium, Psilophyton.

10. Describe briefly the Cretaceous of the North-West Territories.

FACULTY OF APPLIED SCIENCE.

SESSIONAL EXAMINATIONS,

1897.

FACULTY OF APPLIED SCIENCE.

EXAMENS DE FIN D'ANNÉE.

SCIENCES.

PREMIÈRE ANNNÉE.

LE 13 AVRIL.

Examinateurs,..... ..... { M. INGRES. J. L. MORIN.

I.

Composition d'une heure pour laquelle les candidats pourront faire usage du petit Larousse.

II.

1. Employer à la place de chaque nom en italique un pronom en harmonie avec la phrase :

Il vaut mieux souffrir le mal que de faire *le mal*. L'homme oublie plus de choses que *l'homme* ne retient *de choses*. Les hommes louent la vertu mais *les hommes* ne pratiquent pas *la vertu*. L'éléphant est si pesant que l'*éléphant* écrase plus de plantes que l'éléphant ne mange de plantes. La raison supporte les disgrâces, le courage combat *les disgrâces*, la patience et la résignation surmontent *les disgrâces*.

2. Remplacer les pronoms *le, en, y,* par les membres de phrase que ces pronoms représentent :

Les avares sont plus à plaindre qu'on ne *le* saurait imaginer. Corrige-toi tandis que tu *le* peux. L'empire romain touchait à sa ruine, tout le monde *en* était convaincu.

.....Le meunier repartit : Je suis âne, il est vrai, *j'en* conviens, je *l'avoue*. Thémistocle voulait détruire la flotte lacédémonienne, mais Aristide s'y opposa. Judas vendit le divin maître et s'*en* repentit. Je voudrais me venger ; on *m'en* empêche, on ne *le* veut pas, on *s'y* oppose.

3. Quelle est la signification des mots suivants, selon leur genre ? *Hymne ; couple ; somme ; souris ; vase ; mousse.*

4. Quand *vingt, cent* et *mille* sont-ils variables, et quand sont-ils invariables ?

5. Faire accorder les verbes qui se trouvent ici à l'infinitif présent, en personne et en nombre avec les sujets, et les mettre au *temps* et au *mode* indiqués :

INDICATIF PRÉSENT :

Les nuages s'*amonceler*. Les oiseaux *becqueter* les meilleurs fruits. Ces élèves *répéter* comme des perroquets. La mort *niveler* tout. Ils *appeler*, je *mener*. Il *envoyer*. C'est l'or qui *posséder* les avares, et non les avares qui *posséder* l'or. Vous *acheter*. Tu *jeter* des pierres. Si tu *haïr* tes vices tu es à demi corrigé. Nous *haïr* l'injustice. Je *mentir*. Il *cueillir*. Elle *bouillir*. Tu *sortir*. Ils *venir*. Il *dormir*. Nous *avancer*.

PASSÉ DÉFINI:

Alexandre *mourir* à la fleur de l'âge. Eve *cueillir* et *manger* du fruit, défendu. Nous *partir* de grand matin, nous *parcourir* le bois, nous *cueillir des* noisettes, vous *survenir*, nous *tressaillir* de joie. nous *partager* notre récolte. Vous *voir*. Alexandre et Napoléon *concevoir* et *exécuter* de grandes choses. Tu *voir* et *pourvoir*.

SUBJONCTIF PRÉSENT.

On désire que je *venir*, que tu *voir* qu'il *pleuvoir*: que nous nous *protéger*, que vous *savoir*, qu'ils *pouvoir*. Il faut que je *courir*, que tu *acquérir*, qu'il *mourir*, que nous *essuyer*, que tu *semer*, que *j'aller*, qu'ils *s'asseoir*.

III.

1. Faire l'apologie du système métrique. (150 à 200 mots.)

2. Etablir la situation de la ville de Paris au point de vue du trafic, de l'administration et de la pensée en France.

3. Donner quelques renseignements sur la vie et l'œuvre de deux écrivains français de notre siècle.

IV.

Écrire sous forme de compte-rendu, d'analyse ou de critique environ 500 mots sur un des ouvrages suivants: La Belle Nivernaise. L'Ami Fritz. La Mare au diable.—Le Tour du Monde en 80 jours. Le Roi des Montagnes. Le Voyage de M. Perrichon.

N.B.—Les Candidats sont priés de répondre en Français exclusivement et de vouloir bien se servir d'un cahier séparé pour chaque chapitre.

EXAMENS DE FIN D'ANNÉE.

SCIENCES.

DEUXIÈME ANNÉE.

LE 13 AVRIL.

Examinateurs, ... { M. INGRES. / J. L. MORIN.

I.

Composition d'une heure pour laquelle les candidats pourront faire usage du petit Larousse.

II.

1. (*a*) Quelles sont les deux formes au pluriel des mots suivants et (*b*) quel est le sens particulier de chacun ?

Aïeul, ciel, œil.

2. Règles qui se rapportent à l'accord des adjectifs suivants avec le substantif:

Demi, ci-inclus, franc de port, nu, feu, excepté.

3. Le masculin étant donné, indiquer le féminin :

Maître, compagnon, hôte, duc. empereur, héros, dieu, serviteur, borgne, acteur, pêcheur, pêcheur, gendre, loup, jars, poulain, âne, dindon ours, prêtre.

4. Employer à la place de chaque nom en italique un pronom en harmonie avec la phrase.

Le bœuf rend à la terre tout autant que *le bœuf* tire *de la terre.*

L'homme oublie plus de choses que *l'homme* ne retient *de choses.*

Jupiter irrite *Jupiter* contre Apollon, chasse Apollon du ciel, et précipite *Apollon* vers la terre. Dieu nous fit une âme capable de connaître *Dieu* et d'aimer *Dieu.* La vérité surmonte les obstacles qu'on oppose *à la vérité.*

L'éléphant est si pesant que *l'éléphant* écrase plus de plantes que *l'éléphant* ne mange *de plantes.* Le bavard dit tout ce que *le bavard* pense.

5. Remplacer chaque tiret par un pronom en harmonie avec la phrase:

Nous n'admirons pas les choses——nous sommes accoutumés à voir. Il n'y a rien ——Dieu ne soit l'auteur, rien——ne soit sorti de ses mains ; nous lui devons la lumière——nous jouissons et l'air——nous respirons. Les personnes——on parle le moins ne sont pas celles——ont le moins de mérite. La vanité est une idole à——nous sacrifions tout. L'indiscret ——repent souvent de——qu'il a dit. L'honnête homme pense tout—— qu'il dit. Dieu rendra à——selon ses œuvres et n'aura de préférence pour ——. Aimez-vous—— ——; rendez-vous service —— ——; ne parlez

jamais mal—— ——. Etes-vous malades? oui, nous——sommes. Plusieurs villes ont été capitales et ne——sont plus aujourd'hui. Etes-vous la portière de cette maison? oui, je——suis. Vos frères sont-ils décorés? ils ne—— sont pas. Etes-vous les frères du médecin? Oui, nous—— sommes.

6. Faire accorder les verbes, qui se trouvent ici à l'infinitif présent, en personne et en nombre avec les sujets et les mettre au *temps* et au *mode* indiqués :

INDICATIF PRÉSENT :

Trop de plaisir *ennuyer*. La mort niveler tout. Nous *renoncer* à la paresse. Je *mener*. Vous *appeler*. Tu *jeter* des pierres aux oiseaux. Les oiseaux *becqueter* les fruits. Paul et Julien se *repentir*. La marmotte *dormir* tout l'hiver. Nous *fuir*. Tu *sortir*. Ils *venir*. Si tu *vouloir* te corriger d'un défaut, aujourd'hui *valoir* mieux que demain. Ils se *mouvoir* les pieds. Elle *bouillir*.

FUTUR :

Tu *préférer* l'utile à l'agréable. Vous *regretter* le temps perdu. Nous *acheter*. Vous *appeler*. Dieu *protéger* les gens de bien. Tel tu auras vécu, tel tu *mourir*. Je *cueillir*. Tu *courir*. Je *voir* bientôt comment vous *savoir* vos leçons. Ils *envoyer* de leurs nouvelles. *S'asseoir* qui *vouloir*.

IMPARFAIT DU SUBJONCTIF :

Il fallait que je *parcourir*, que vous *survenir*, que tu *soutenir*, qu'il *venir*, qu'ils *parler*. On désirerait que je *pourvoir* à mes besoins, que tu *voir* plus clair, que Paul *savoir* bien ses leçons, qu'il *pleuvoir* moins souvent, que nous *recevoir* des félicitations.

III.

1. Citer une demi-douzaine de proverbes français et dire dans quelles circonstances on s'en sert.

2. Faire une rapide esquisse du mouvement politique en France depuis 1789 jusqu'à nos jours. (500 mots environ).

3. Donner quelques détails sur la vie et l'œuvre de V. Hugo, de Béranger et de de Vigny. (75 à 100 mots sur chacun).

IV.

Ecrire sous forme de compte-rendu, d'analyse ou de critique environ 500 mots sur un des ouvrages suivants : L'homme à l'oreille cassée. Le Blocus. La Débâcle. Oméga. Vingt-mille lieues sous la mer. Melle. de la Seiglière. Cinq-Mars.

N.B.—Les Candidats sont priés de répondre en français exclusivement et de vouloir bien se servir d'un cahier séparé pour chaque chapitre.

(*For First Year see under Faculty of Arts.*)

GERMAN.

SECOND YEAR APPLIED SCIENCE.

TUESDAY, APRIL 13TH:—AFTERNOON, 2 TO 5.

Examiner,.....L. R. GREGOR, B.A., PH.D.

N.B.—Questions expressed in German are to be answered in German. Candidates may omit No. 4 or No. 5.

1. Translate into English:

(*a*) Obgleich alle Wärme auf der Oberfläche der Erde nur von der Sonne kommt, so hat doch die Erde auch ihre eigentümliche Wärme, wie aus der Temperaturzunahme folgt, welche man in grossen Tiefen beobachtet hat. Wenn die Wärme nach dem Mittelpunkte der Erde hin auch in grösserer Tiefe noch in dem Maasse zunimmt, welches uns diese Beobachtungen zeigen, so müsste schon in einer Tiefe von 10,000 Fuss die Temperatur des siedenden Wassers herrschen, im Mittelpunkte der Erde aber müssten alle Körper glühend sein und in geschmolzenem Zustande sich befinden. Dass wir von dieser ungeheuren Hitze im Inneren der Erde auf der Oberfläche nichts merken, lässt sich durch das schlechte Leitungsvermögen der erkalteten Erdkruste erklären, welche diesen glühenden Kern einschliesst.

(*b*) Der Sauerstoff ist das verbreitetste aller Elemente und dasjenige, welches in dem uns zugänglichen Teil des Weltalls von allen in der grössten Menge enthalten ist. In freiem Zustande kommt er mit Stickstoff gemengt in der atmosphärischen Luft vor. Der Sauerstoff ist ein farbloses, geruchloses, und sehr schwer condensirbares Gas. Er ist für sich nicht brennbar, bewirkt aber die Verbrennung anderer Körper, die in reinem Sauerstoff unter viel intensiveren Licht — und Feuererscheinungen als in der Luft verbrennen.

(*c*) Die hauptsächlichste Anwendbarkeit dieser elektrischen Kraftübertragung besteht darin, dass eine Kraftquelle dadurch an einer Stelle Arbeit leisten kann, von der sie weit entfernt ist. Es dürfte also diese elektrische Uebertragung der Arbeit hauptsächlich dazu dienen, um Wasserkräfte an entfernten Stellen Arbeit verrichten zu lassen. Die Energie, welche von Wasserfällen und überhaupt von fliessendem Wasser zum Treiben von Maschinen benutzt werden kann, wird ja von der Natur in unerschöpflicher Fülle direkt geboten.

und die Benutzung derselben erfordert keine viel grösseren Kosten als die der ersten Einrichtung.

2. (*a*) Was geschieht, wenn ein Lichtstrahl auf eine polierte Fläche fällt? (*b*) Wie nennt man gut polierte Flächen? (*c*) Was ist das allgemeine Reflexionsgesetz? (*d*) Was ist der Brennpunkt eines Spiegels? (*e*) In welchem Verhältnis steht die Brennweite zu dem Radius? (*f*) Beschreiben Sie das Spektroskop (*g*) Wie heiszen die Entdecker der Spektralanalyse?

3. (*a*) Was ist die Deklination? (*b*) Bleibt sie immer dieselbe? (*c*) Wann ist sie am gröszten? (*d*) Was sind isogonische Linien? (*e*) Wie heiszt die gewöhnliche Deklinationsnadel?

4. (*a*) Wie macht man Glaselektrizität und Harzelektrizität? (*b*) Nennen Sie einige guten Leiter. (*c*) Beschreiben Sie die Leidener Flasche. (*d*) Was ist ein Elektroskop? (*e*) Beschreiben Sie einen Versuch (experiment) mit den Hollundermarkkügelchen.

5. Wie entsteht der Schall? (*b*) Beschreiben Sie den Versuch mit der Glasglocke und dem Violinbogen. (*c*) Wovon hängt die Stärke eines Tons ab? (*d*) Wovon hängt die Höhe des Tones ab? (*e*) Beschreiben Sie eine Sirene.

ZOOLOGY.

THIRD YEAR ARTS, SECOND YEAR APPLIED SCIENCE AND FIRST YEAR MEDICINE.

WEDNESDAY, APRIL 14TH:—9 TO 12 A.M.

Examiner,..... W. E. DEEKS, B.A., M.D.

1. Select types of *Foraminifera*, *Radiolaria*, and *Sporozoa*. Describe their structure, modes of occurrence and reproduction.

2. Describe fully the structure and mode of development of any member of the *Hydrozoa*. Contrast them morphologically with the *Scyphozoa*.

3. Classify the *Echinodermata*. Characterize briefly its subdivisions and give examples.

4. Describe fully the structure and development of any member of the *Coleoptera* or *Lepidoptera*.

5. Write on the general morphological characters of the *Mollusca*, and give a detailed description of a member of the *Cephalopoda*.

6. Give the distinctive characters of the subdivisions of *Chaetopoda*, pointing out the principal modifications with examples.

7. What are the distinguishing characters of Mammalia? Briefly characterize *Cetacea*, *Marsupialia*, *Perissodactyla*, *Cheiroptera* and *Pinnipedia*.

8. Classify *Amphibia*, and briefly characterize each subdivision giving examples.

9. Briefly characterize and give examples of *Hyalospongia*, *Cestoda*, *Ctenophora*, *Brachiopoda*, *Macroura*, *Tunicata*, *Araneida*, *Grallatores* *Chelonia*, *Selachii*.

10. Practical examination in the Redpath Museum.

B.A. ORDINARY EXAMINATION AND THIRD YEAR APPLIED SCIENCE, 1897.

GEOLOGY.

TUESDAY, APRIL 13TH :—MORNING, 9 TO 12 AND 2 P.M.

Examiners, ... { B. J. HARRINGTON, M.A., PH.D. / FRANK D. ADAMS, M.AP.SC., PH.D.

1. Describe the various ways in which organic remains are found preserved in rocks? Explain the value of these to the geologist.

2. State what you know concerning the development of deltas and the part played by delta lands in human history.

3. State clearly the evidence which we have of the repeated elevation and submergence of the district about Montreal.

4. Explain the principal theories that have been put forward to account for the motion of glaciers, stating the facts for and against them.

5. Explain what is meant by comprehensive types. Give examples both living and extinct.

6. Draw upon the outline map of North America supplied, the Protaxes of the Continent as they appeared at the close of the Eozoic, and explain the subsequent development of the continent about them.

7. State what you know concerning the Huronian system in Canada, treating of its distribution, petrographical characters, origin and economic relations.

8. Distribution and sub-division of the upper Silurian System in Canada. Name and describe a few characteristic fossils.

9. State what you know concerning the fishes of the Palaeozoic and Mesozoic.

10. State the zoological or botanical and the geological relations of:—

Sigillaria, Sternbergia, Hylonomus, Coccosteus, Pentamerus, Rhynconella, Bathygnatus, Brontosaurus, Eozoon, Olenellus, Favosites, Zaphrentis.

2 O'CLOCK P.M.

11. Name the fossils exhibited, and state the geological formations to which they belong.

12. Name and describe the rock specimens.

THIRD YEAR HONOURS IN NATURAL SCIENCE, AND THIRD YEAR APPLIED SCIENCE.

(*Chemistry and Mining Courses.*)

DETERMINATIVE MINERALOGY.

FRIDAY, 23RD APRIL:—MORNING, 9 TO 11.

Examiners, { B. J. HARRINGTON, M.A., PH.D. / NEVIL NORTON EVANS, M.A.Sc.

1. Mention the uses of the following reagents in blowpipe analysis:—Cobalt nitrate, bisulphate of potash, tin, oxide of copper, bone-ash, microcosmic salt.

2. State what takes place on heating each of the following minerals on charcoal: Pyrite, niccolite, atacamite, tetrahedrite, magnetite.

3. Describe carefully the operation of roasting, telling what is the object of the process, and what chemical changes are involved.

4. Describe a general classification of minerals suitable for blowpipe purposes.

5. Give blowpipe tests for the following elements: Sulphur, titanium, phosphorus, chromium, fluorine, zirconium.

6. What are the principal reactions of the following minerals: Almandite, dolomite, franklinite, malachite, prehnite?

7. How would you distinguish titanite from tourmaline, calamine from willemite, magnetite from ilmenite, apatite from fluorite, molybdenite from graphite?

8. Describe with a figure the method of determining the specific gravity of a mineral by means of the Jolly spring balance.

Determination of minerals, in the Chemical Laboratory, 2 to 6 p.m.

FIRST YEAR.

CHEMISTRY.

THURSDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiners,..... { B. J. HARRINGTON, M.A., PH.D.
ALEXANDER BRODIE, B.A. SC.

1. How many liters of Hydrogen Sulphide at 20°C and 750 mm. can be made by dissolving 50 grams of Iron Sulphide in dilute Sulphuric Acid?

2. How many tons of Coke containing 90 per cent. of Carbon would be required to reduce 450 tons of Hematite on the supposition that the Carbon is converted into Monoxide?

3. Express by means of equations the chemical changes that take place in the Solvay process for the manufacture of Soda.

4. How does the metal Copper occur in nature? What are its properties? Give the composition of the principal Copper alloys.

5. What solvents would you employ if you wished to dissolve each of the following: Sulphur, Phosphorus, Iodine, Silver, Gold?

6. How is Pig Iron made? How converted (*a*) into Wrought Iron, and (*b*) into Steel?

7. Describe Marsh's test for the detection of Arsenic, giving a sketch of the apparatus that you would employ.

8. Give the formula of any five of the following compounds:—Borax, Bismuth Nitrate, Ferric Sulphate, Tartar Emetic, Phosphine, Metaphosphoric Acid.

9. Give the principal blowpipe reactions of any five of the following metals: Antimony, Copper, Zinc, Manganese, Chromium, Mercury.

10. How would you distinguish among (*a*) Chlorides, Bromides and Iodides, (*b*) Salts of Magnesium, Aluminium and Zinc, (*c*) between a Carbonate and an Oxalate, (*d*) between a Ferrous and a Ferric Salt?

SECOND YEAR (DEPARTMENT OF MINING.)

PRACTICAL CHEMISTRY.

TUESDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, M.A., PH.D.
NEVIL NORTON EVANS, M.A.Sc.

(NOTE.—Answer any eight questions.)

1. Give blowpipe reactions for five of the following metals : Lead, arsenic, zinc, chromium, nickel, antimony, manganese.

2. Give the principal reactions of five of the following metals : copper, tin, iron, aluminium, magnesium, bismuth, cobalt.

3. Give three tests by which ferrous and ferric salts may be distinguished from one another.

4. Give tests for five of the following acids : Hydrofluoric, phosphoric, hydrobromic, boric, silicic, sulphuric.

5. Describe with a figure any form of self-regulating sulphuretted hydrogen generator ; explain its action, telling what reagents are used, and giving the equation representing the reaction that takes place.

6. What conditions are to be observed in precipitating metals from solution by means of sulphuretted hydrogen, and how may it be ascertained when precipitation is complete ?

7. Describe carefully the precipitation of the metals of the iron group, phosphoric acid being absent, giving the reasons for the addition of each reagent.

8. A flocculent precipitate is frequently obtained when testing for magnesium with sodium phosphate ; of what does this probably consist, and how may it be determined whether it contains magnesium or not ?

9. Describe carefully the method of bringing alloys into solution.

10. Give equations representing the reactions that take place in five of the following cases : (*a*) Sulphuretted hydrogen is passed into a solution of ferric chloride, (*b*) barium carbonate is added to a solution of chromium chloride, (*c*) arsenious sulphide is treated with ammonium sulphide, (*d*) ammonium sulphide is added to solution of aluminium chloride, (*e*) metallic zinc is treated with cold, very dilute, nitric acid, (*f*) calcium oxide is treated with water.

SECOND YEAR (DEPARTMENT OF PRACTICAL CHEMISTRY).

PRACTICAL CHEMISTRY.

TUESDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiners, ... { B. J. HARRINGTON, M.A., PH.D.
NEVIL NORTON EVANS, M.A.SC.

(NOTE.—Answer four questions from each group.)

A

1. Into how many groups are the metals divided for purposes of analysis? Mention the metals of each group, and tell how the groups are distinguished from each other.

2. A solution containing no silver, lead, or mercury gives a precipitate upon the addition of hydrochloric acid. Of what may this precipitate consist?

3. Why is the precipitate produced by adding sulphuretted hydrogen to an acid solution containing metals treated with ammonium sulphide? Describe carefully the operation, giving reasons for the various steps and conclusions to be drawn from the results obtained.

4. Describe the separation of iron, manganese, aluminium, and zinc when they occur together as chlorides.

5. A solution contains chlorides of sodium, potassium, and ammonium; describe the separation of the metals.

B.

6. Describe carefully the drying, ignition, and weighing of precipitates.

7. How may the quantity of iron in a solution of ferrous ammonium sulphate be determined gravimetrically?

8. How may the quantity of carbonic acid in a sample of marble be determined?

9. Describe the determination of the antimony in a sample of tartar emetic.

10. In a determination of calcium in a sample of limestone, the calcium oxide obtained from 1 gr. of the limestone weighed 0.497 gr. Calculate the percentage of pure calcium carbonate in the limestone.

11. In determining the SO_4 in a sample of pure crystallised copper sulphate, 0.893 of the substance was used and the Ba SO_4 obtained was found to weigh 0.807 gr. Calculate the percentage error.

THIRD YEAR (DEPARTMENT OF MINING).

PRACTICAL CHEMISTRY.

TUESDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiners,..... } B J. HARRINGTON, M.A., PH.D.
NEVIL NORTON EVANS, M.A.SC.

1 Describe carefully the operations of decantation, filtration, and washing of precipitates.

2. Give briefly two methods of determining the copper in a sample of copper sulphate.

3. Describe in detail the preparation of a standard solution of potassium permanganate or of potassium bichromate.

4. Describe the determination of the moisture, volatile combustible matter, fixed carbon, and ash in a sample of coal.

5. How may the quantity of sulphur in a sample of iron pyrites be determined ?

6. Describe the determination of the carbonic acid in a sample of limestone.

7. A solution contains iron and free hydrochloric acid; describe the gravimetric or volumetric determination of the quantity of iron present.

8. In determining the chlorine in pure sodium chloride, 0.635 gr. of the substance was used, and the silver chloride obtained weighed 1.501 gr. What was the percentage error ?

SECOND AND THIRD YEARS (*Chemistry Course*).

ORGANIC CHEMISTRY.

MONDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, M.A., PH.D.

(*Answer any ten questions.*)

1. Give illustrations of isomerism as existing in the Paraffins and Alcohols.

2. Explain each of the following terms :—Ether, Mixed Ether, Ester, Alcoholate, Mercaptan, Sulphonic Acid.

3. 0.256 gram of Uric Acid was heated with Soda-lime and the evolved Ammonia absorbed in Hydrochloric Acid. The Ammonium

Chloride solution was evaporated to dryness, the residue dissolved and the Chlorine thrown down as Silver Chloride which weighed 0.8795 gram. Calculate the percentage of Nitrogen in the Uric Acid.

4. What are the principal methods employed in the purification of organic bodies?

5. An organic acid gave on analysis Carbon 68.67 p. c., Hydrogen 4.95 p. c., Oxygen 26.38 p. c. Its vapour was 4.226 times as heavy as air. Calculate its formula.

6. What are the general properties of the Aldehydes? Describe the preparation of Ethyl Aldehyde.

7. What do you understand by the Iodoform reaction for Alcohol? Name any other bodies that give a similar reaction.

8. What do you understand by physical isomerism? Give examples.

9. Describe the preparation of Formic Acid, illustrating the changes that take place by means of equations.

10. Explain the reactions involved in the formation of Ethyl Mustard Oil.

11. Give the names and explain the constitution of some of the principal derivatives of Ethylidene Lactic Acid.

12. Explain briefly the constitution of each of the following bodies:—Ethyl-amine, Glycol, Glycollic Acid, Asparagine, Malic Acid.

B.A. Sc. (*Chemistry Course*).

INORGANIC CHEMISTRY.

Thursday, April 15th:—Morning, 9 to 12.

Examiner,.....B. J. Harrington, M.A., Ph.D.

1. Why is 48 regarded as the molecular weight of Ozone?

2. Give illustrations of the three different kinds of action exhibited by Chlorine.

3. State what you know with regard to the preparation, properties and constitution of Disulphuric Acid.

4. Describe the preparation and properties of Iodic Acid and Iodine Pentoxide.

5. State what you know with regard to each of the following:—Euchlorine, Mestastannic Acid, Chlorauric Acid, Turnbull's blue.

6. What weight of Hydrochloric Acid gas is produced in the manufacture of 100 tons of Salt Cake? What volume of gas escapes if the manufacturer condense only 90 per cent. of the quantity given off?

7. How may pure Silver be prepared? Give the properties of the metal, and explain the use of Silver salts in photography.

8. State what takes place in any three of the following cases:—(*a*) When Chlorine is passed through water in which Iodine is suspended. (*b*) When Carbon Disulphide is dissolved in a strong solution of Sodium Hydrosulphide. (*c*) When Ammonium Magnesium Phosphate is heated. (*d*) When Potassium Iodide is added to a solution of Copper Sulphate. Give equations.

9. What are Alums? What the principal ones that have been prepared? Explain their constitution.

10. State briefly how you would prepare any four of the following:—Hydrobromic Acid, Selenic Acid, Carbonyl Chloride, Cuprous Sulphocyanate, Mercurous Nitrate, Lead Peroxide.

B. A. Sc. (*Chemistry Course*).

ANALYTICAL CHEMISTRY AND ASSAYING.

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, M.A., PH.D.

1. 0.243 grm. of an organic body containing Carbon, Hydrogen, and Oxygen gave on combustion 0.693 grm. of Carbon Dioxide and 0.162 grm. of Water. Find the percentage composition and simplest formula of the body.

2. In the analysis of a Silicate 1.5 grm. of the mineral was employed; the weight of the mixed Chlorides was 0.0277 grm. and that of the Potassium Chloroplatinate 0.016 grm. Calculate the percentages of Potash and Soda in the mineral.

3. How would you ascertain the proportion of fatty oil in a mixture of fatty and Hydrocarbon oils?

4. Describe a volumetric method for the estimation of Manganese in iron and Steel.

5. What are the principal precautions to be taken in the separation (*a*) of Silica from bases, (*b*) of Iron from Nickel, (*c*) of Lime from Magnesia, (*d*) of Potassium from Sodium?

6. How would you determine the amount of Copper in a specimen of Chalcopyrite by the Iodide method?

7. Describe the determination of temporary and permanent hardness in a Water.

8. How would you determine (*a*) the Gold in a sample of Auriferous Mispickel, and (*b*) the Silver in an Argentiferous Chalcocite?

9. Describe the volumetric estimation of Titanium in an Iron Ore.

10. An alloy consists of Tin, Antimony, Copper and Lead. State briefly how you would separate and estimate the different metals.

B.A.Sc. (*Mining Course*).

ASSAYING.

TUESDAY, APRIL 6TH:—MORNING 9 TO 12.

Examiner,.....B. J. HARRINGTON, M.A., PH.D.

1. Describe the volumetric estimation of Lead with standard solution of Ammonium Molybdate, mentioning any special precautions that should be taken to ensure accuracy.

2. How would you estimate the quantity of Lime in a slag volumetrically?

3. Explain the principles of the scorification assay for Gold and Silver. What charge would you employ (*a*) for an ore consisting of Zinc Blende in Calcite gangue, (*b*) for an ore consisting of Galena in gangue of Heavy Spar, (*c*) for a sample of Copper Matte?

4. Explain Volhard's method for the estimation of Manganese.

5. How would you determine the relative proportions of Ferrous and Ferric Oxide in a sample of Magnetite?

6. Briefly describe Pearce's method for the estimation of Arsenic.

7. Thirty grams of Galena gave on dry assay 21 grams of Lead, and this on cupellation yielded 15 milligrams of Silver. Deduce the percentage of Lead and the ounces of Silver to the ton of ore.

8. How would you determine the percentage of Chromic Oxide in a sample of Chromic Iron Ore?

9. What are the uses of the following reagents in assaying? Ammonium Acetate, Metallic Lead, Stannous Chloride, Potassium Nitrate, Bromine.

10. State briefly how you would ascertain the value of the materials represented by the samples shown.

FIRST YEAR.

MATHEMATICS, I.

TUESDAY, DECEMBER 15TH :—MORNING, 9 to 12.30.

Examiner,.....R. S. LEA, MA.E.

1. Bisect a given triangle by a straight line drawn from a given point in one of its sides.

2. If any chord is drawn through a fixed point within a circle, the product of its segments is constant in whatever direction the chord is drawn. What is the locus of its middle point?

3. Prove that the distance between the points of contact of the inscribed and escribed circles on any side of a triangle is equal to the difference of the other two sides.

4. The rectangle contained by the diagonals of a quadrilateral inscribed in a circle is equal to the sum of the rectangles contained by its opposite sides.

5. Equal triangles which have one angle of the one equal to one angle of the other have their sides about the equal angles reciprocally proportional.

6. Prove that the bisectors of the angles of a triangle all pass through one point.

7. The sum of the faces of any convex polyhedral angle is less than four right angles.

8. Pyramids on equal bases and of the same altitude are equal. Also, find the volume of a triangular pyramid.

9. Find the volume of a sphere.
The diameter of one sphere is one-sixth that of another; what are the ratios of their surfaces and volumes?

10. Given the focus and directrix of a parabola; show how to determine :—
(*a*) Any number of points on the curve,
(*b*) The tangents at those points.

11. In a parabola: —
(*a*) Tangents from any point subtend equal angles at the focus.
(*b*) The subnormal is constant.

12. Find the locus of the vertex of a triangle if the base is constant and
(*a*) the area constant,
(*b*) the sum of the sides constant,
(*c*) the sum of the squares on the sides constant.

FIRST YEAR.

MATHEMATICS II.

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.30.

Examiner,..... R. S. LEA, MA.E.

1. Factor (1) $1 - a^2x^2 - b^2y^2 + 2abxy$ (2 factors).
(2) $x^3+y^3+3xy\ (x+y)$ (3 ").
(3) $x^3 - 8x^2 - 31x - 22$ (3 ").
(4) $(a-b)^3 + (b-c)^3 + (c-a)^3$ (4 factors).
(5) $9x^6y^2 - 576y^2 - 4x^8 + 256x^2$ (6 factors).

2. Show that:

(1) $$\frac{6x^2y^2}{m+n} \div \left(\frac{3(m-n)x}{7(r+s)} \div \left\{\frac{4(r-s)}{21xy^2} \div \frac{r^2-s^2}{4(m^2-n^2)}\right\}\right) = \frac{32}{3}$$

(2) $$\left(1+\frac{q}{p}\right)^{\frac{p}{p+q}} \div \sqrt[p]{\frac{a^{2p}}{(a^{-1})^{-p}}} = 1.$$

3. Distinguish between an identity and an equation, with examples.
Define a root of an equation, and show that a quadratic cannot have more than two roots. Also state the relation that must exist among the co-efficients of $ax^2 + bx + c = 0$, in order that the roots may be
(1) real and unequal,
(2) real and equal,
(3) imaginary.

4. Solve

(1) $$\frac{x-5}{x-6} - \frac{x-6}{x-7} - \frac{x-1}{x-2} + \frac{x-2}{x-3} = 0$$

(2) $$\frac{2x-1}{x^2+2x-1} = \frac{x+4}{x^2+x+4}$$

(3) $$\sqrt{x+5} + \sqrt{x} = \frac{10}{\sqrt{x}}$$

5. Prove that if $a + \sqrt{b} \quad x + \sqrt{y}$ where $\sqrt{b}$ and $\sqrt{y}$ are true surds, then $a = x$ and $b = y$.

Find the square root of $12 - 6\sqrt{3}$ and simplify

$$\frac{5\sqrt{3}}{2\sqrt{3} + \sqrt{12-6\sqrt{3}}}$$

6. In an Arithmetical Progression the 3rd term is 4 times the 1st; and the 6th is equal to 17. Find the series.

7. In the series $\frac{8}{5}, -1, \frac{5}{8}, \ldots\ldots$
find the sum of (1) 100 terms,
(2) an infinite number of terms.

8. Find the number of permutations which can be made from the letters of the words (1) combine, (2) unfrequented.

9. Prove the rule for finding the value of r, which will give the greatest number of combinations of n different things taken r at a time.

10. Write down (1) four terms of the expansion of $(a - 2x)^{-\frac{3}{2}}$, (2) the greatest term in the expansion of $(7x + 2y)^{30}$ when $x = 8$ and $y = 14$.

11. Find the 5th root of 244 to 3 decimal places.

FIRST YEAR.

MATHEMATICS III.

MONDAY, APRIL 12TH:—MORNING, 9 TO 1.

Examiner, ...R. S. LEA, MA.E.

1. Trace the changes in the tangent as the angle increases from 0 to 2π radians.

Also find a general expression for all angles which have a given tangent.

2. Between what limits of θ is the value of $\sin\theta + \cos\theta$ positive?

3. Show that

(1) $\cos^4\theta + \sin^4\theta = 1 - 2\cos^2\theta\sin^2\theta$.

(2) $\dfrac{1 - 2\sin^2\theta}{1 + \sin 2\theta} = \dfrac{1 - \tan\theta}{1 + \tan\theta}$

(3) $\dfrac{3\sin A - \sin 3A}{3\cos A + \cos 3A} = \tan^3 A$.

(4) $\cos A + \cos 3A + \cos 5A + \cos 7A = 4 \cos 4A \cos 2A \cos A$.

(5) $\tan^{-1} \frac{5}{7} + \tan^{-1} \frac{1}{6} = \frac{5}{4}$

4. Find θ from the equations

(1) $\sin^2 \theta - 2 \cos \theta + \frac{1}{4} = 0$.

(2) $\sin 7\theta - \sin \theta = \sin 3\theta$.

5. ABC is (1) a plane triangle, (2) a spherical triangle.

Assuming the expression for $\cos A$ in terms of the sides, find $\cos \frac{1}{2} A$, and write down the expression for $\tan \frac{1}{2} A$.

6. Deduce any three of the formulae for the solution of right-angled spherical triangles, giving the construction of the diagram employed.

7. Show how to solve a plane triangle given two sides and the included angle.

Deduce a formula for finding the third side without finding the remaining angles.

8. Deduce a formula for finding the area of a spherical triangle.

9. In the plane triangle in which

$a = 537.21$, $B = 117° 23' 12''$, $C = 52° 18' 10''$

show that $A = 10° 18' 38''$, $b = 2665$, $c = 2375$.

10. In the spherical triangles in which

(1) $A = 156° 39'$, $B = 98° 10'$, $C = 90°$.

(2) $a = 69° 50'$, $b = 46° 42'$, $A = 32° 54'$,

show that

(1) $a = 158° 4'$, $b = 111° 0$, $c = 70° 34'$.

(2) $c = 109° 39'$, $B = 24° 55'$, $C = 146° 58'$.

FIRST YEAR.

MATHEMATICS, IV.

MONDAY, APRIL 19TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Distinguish between (1) Kinematics, Kinetics and Statics; (2) Kinetic Energy and Potential Energy. State the Law of Gravitation, and explain the principle of the Conservation of Energy.

2. A velocity of 6 becomes one of 3 at an angle of 60° to its original direction. Find the change of velocity.

3. A body is acted upon by three simultaneous forces, viz., one of 3 lbs. towards the east, one of 4 lbs. towards the south, and one of 12 lbs. vertically downwards. What is the resultant force?

4. Masses of 3 and 5 pounds, respectively, are connected by a string which passes over a pulley as in an Atwood machine. Find the acceleration and the tension of the string.

5. Prove that the centre of gravity of a triangle formed by bending a uniform thin heavy rod at two points until its ends meet, is the centre of the circle inscribed in the triangle formed by joining the middle points of the sides.

6. Three men are to carry a beam which is of uniform size and density, and is 12 feet long. If one of the three lifts at one end, and the other two lift by means of a bar, where ought the bar to be applied so that each man may bear one-third of the weight.

7. A body appears to weigh P lbs. when in one scale of a balance, and Q lbs. when in the other. Prove that the true mass is $\sqrt{P\,Q}$ lbs. and that the ratio of the arms of the balance is $\sqrt{\frac{P}{Q}}$.

8. When a body of weight W rests on an inclined plane of inclination θ the component of its weight down the plane is $W \sin \theta$, and the component at right angles to the plane is $W \cos \theta$. Prove this.

9. A piece of cork (sp. gr. $\frac{1}{4}$) weighing 1 lb. is attached to 34 lbs. of lead. The whole weighs 28 lbs. in water. Find the specific gravity of the lead.

10. A hollow cone is sunk in water until the water rises half way up. What is the depth?

FACULTY OF APPLIED SCIENCE

SECOND YEAR.

MATHEMATICS, I.

MONDAY, DECEMBER 14TH:—MORNING, 9 TO 12.30.

Examiner,.....G. H. CHANDLER, M.A.

1. Draw the curves $y^2 = x\,(1 + x)$, $y = \sin 2x$.

2. Find the equation of the line joining $(5, -4)$ to $(-3, 2)$. Does the point $(-7, 5)$ lie on this line? If so, find in what ratio it divides the line.

3. Find the co-ordinates of the centre, and also the radius of the circle described about the triangle whose angular points are (6, 2), (—2, 4), (4, —2).

4. The axes of the curve $x^2-4xy-2y^2+6y-2=0$ are changed to parallel ones through the point $(1, \frac{1}{2})$, and are then turned through an angle whose tangent is 2. Show that the equation becomes

$$6x^2-4y^2+1=0.$$

5. What is the equation of the chord of contact of tangents drawn from the point (4, 1) to the circle $x^2+y^2=9$? (Write down the equation of the line, and *prove* that it is the line required.)

6. What is the equation of the line which touches the circle

$$x^2+y^2-2x-6y=3$$ at the point (—2, 1)?

7. Find the equation of the tangent to a parabola in terms of the slope. What is the equation of a line which touches $y^2=8x$ and makes with the axis of x an angle which is twice that made by $2x-y=1$ with the same axis?

8. Find the subtangent and subnormal at a given point on the ellipse

$$\frac{x^2}{a^2}+\frac{y^2}{b^2}=1.$$

At what points is the subtangent numerically equal to the abcissa of the point of contact?

9. What are the asymptotes of a hyperbola? Why are they to be regarded as tangents? Show that the perpendicular from a focus on an asymptote is equal to half the conjugate axis of the curve.

10. Find the locus of a point in a line which moves with its extremities on two lines which are perpendicular to each other.

SECOND YEAR.

MATHEMATICS, II.

MONDAY, APRIL 12TH:—MORNING, 9 TO 12.30.

Examiner,.....G. H. CHANDLER, M.A.

1. Show that

(1) $$d\left(\frac{x}{\sqrt{a^2+x^2}}\right)=\frac{a^2\,dx}{(a^2+x^2)^{\frac{3}{2}}},$$

(2) $d \log (x + \sqrt{x^2 + a^2}) = \dfrac{dx}{\sqrt{a^2 + x^2}}$,

(3) $d \sin^{-1} \left(\dfrac{x^2 - 1}{x^2 + 1}\right) = \dfrac{2\,dx}{x^2 + 1}$.

2. Show that

(1) $\int_0^2 \dfrac{dx}{x^2 + 4} = \cdot 393$,

(2) $\int_0^2 \dfrac{x\,dx}{x^2 + 4} = \cdot 347$,

(3) $\int_0^2 \dfrac{x^2\,dx}{x^2 + 4} = \cdot 429$,

(4) $\int_{\frac{1}{4}\pi}^{\frac{1}{2}\pi} \cot\theta\, d\theta = \cdot 347$,

(5) $\int_{\frac{1}{4}\pi}^{\frac{1}{2}\pi} \cot^2\theta\, d\theta = \cdot 215$,

(6) $\int_{\frac{1}{4}\pi}^{\frac{1}{2}\pi} \cot^3\theta\, d\theta = \cdot 153$.

3. Also that

(1) $\int e^x \sin 2x\, dx = \dfrac{1}{5} e^x (\sin 2x - 2\cos 2x)$,

(2) $\int \dfrac{dx}{x^4(1 + x^2)} = \dfrac{1}{x} - \dfrac{1}{3x^3} + \tan^{-1} x$.

4. Find the equations of the tangents at $(-1, 1)$ and $(2, 1)$ on the curve $x^2y - xy^2 = 2$.

5. Given the curve $x^2y = x^3 + x + y$,

(1) Find the three asymptotes,

(2) Also the tangent at the origin,

(3) Show that $\dfrac{dy}{dx} = \dfrac{x^4 - 4x^2 - 1}{(x^2 - 1)^2}$, $\dfrac{d^2y}{dx^2} = \dfrac{4x(x^2 + 3)}{(x^2 - 1)^3}$,

(4) Find the point of inflexion,

(5) Show that the maximum ordinate is where $x = \sqrt{2 + \sqrt{5}}$,

(6) That the radius of curvature where $= \sqrt{2}$ is $\dfrac{13}{10}\sqrt{13}$,

(7) That the area from $x = 2$ to $x = 3$ is 3.48.

6. Find by integration the surface and volume of a sphere.

7. Find the moment of inertia (1) of a triangle with reference to one side, (2) of a right circular cone with reference to its geometrical axis.

8. Show that the vertical angle of the cone of greatest volume which can be described by the revolution of a right-angled triangle of given hypotenuse is $2\tan^{-1}\sqrt{2}$.

9. Find to two decimal places one root of the equation

$$x^4 - 6x^2 + 8x - 7 = 0.$$

SECOND YEAR.

MATHEMATICS, III.

MONDAY, APRIL 19TH :—MORNING, 9 TO 12.30.

Examiner,.....R. S. LEA, MA.E.

1. A body is thrown vertically upwards, with a velocity of 160 ft. per second. Find

(1) When it will come to rest.

(2) The height to which it will rise.

(3) What distance it describes during the third second of its motion.

2. If a body be projected with a velocity u at an angle θ to the horizontal, find

(1) The equation of its path,

(2) The greatest height to which it will rise,

(3) The time of flight,

(4) And the range on a horizontal plane.

3. A bullet is fired with a velocity whose vertical component is 160 ft. per second, and its range on a horizontal plane is found to be 1,000 ft. Find the horizontal component of the velocity and the greatest height reached.

4. What is a poundal, and what is a dyne? How many dynes are there in a poundal, the foot containing 30.48 centimetres and the pound 453.6 grammes?

5. Two scale pans each of mass 2 ounces are suspended by a weightless string passing over a smooth pulley; a mass of 10 ounces is placed in the one and 4 ounces in the other. Find the tension of the string and the pressure on the scale pans.

6. A train is running on a horizontal railroad at the rate of 30 miles per hour, the resistance due to friction, etc., being 10 lbs. per ton. If the steam is shut off, find (1) the time that elapses before the train comes to rest, (2) the distance described in this time.

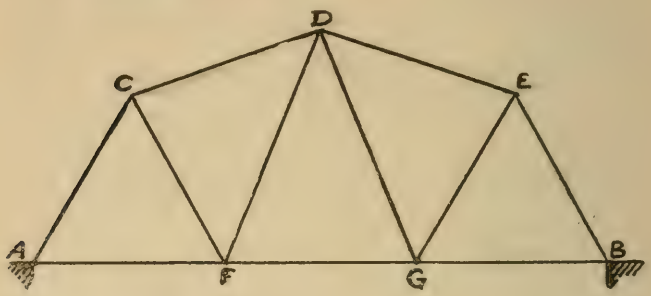
7. A pendulum 3 feet long is observed to make 700 oscillations in 671 seconds. Find approximately the value of g.

8. Explain two methods of finding the resultant of a number of forces acting in one plane but not all at one point.

9. State the conditions of equilibrium, (1) of a particle, (2) of a rigid body.

10. Two smooth spheres each 1 ft. in diameter and weighing 10 lbs. are placed inside a hollow cylinder of 20 inches diameter, open at both ends, and resting on a horizontal table. Find the weight of the cylinder when just on the point of overturning.

11. In the accompanying figure



$AF = FG = GB = 15$ ft.

ACF and GEB are equilateral triangles.

DFG is an isosceles triangle whose side $= 20$ feet.

Loads of 2,000 lbs. each are concentrated at C, D and E. Tabulate the stresses in the different parts of the frame.

If the support at A were moved to F, and a load of 1,000 lbs. added at A, find the reaction at F and B, and the new stress in CD.

THIRD YEAR.

MATHEMATICS, I.

WEDNESDAY, DECEMBER 16TH:—MORNING, 9 TO 12.30.

Examiner, ... G. H. CHANDLER, M.A.

1. Find the tangent of a circle in terms of the slope.

2. The perpendicular from the centre of an ellipse on a tangent $= ab/b_1$, where b_1 is the semi-diameter conjugate to that passing through the point of contact.

3. Given the conic $x^2 - 4xy - 2y^2 + 6y - 2 = 0$, find
(1) the centre,
(2) the angle between the principal diameters and the co-ordinate axes.
(3) the equation referred to the principal diameters.
Also (4) draw the curve.

4. Show that

$$(1) \int_0^{\frac{\pi}{4}} \tan^3 \theta \, d\theta = \tfrac{1}{2} (1 - \log 2),$$

$$(2) \int_0^{\frac{\pi}{2}} \sec^2 4\theta \, d\theta = \tfrac{1}{4} \sqrt{3},$$

$$(3) \int_0^1 \frac{x \, dx}{\sqrt{1-x^4}} = \tfrac{1}{4} \pi,$$

$$(4) \int e^x \sin x \, dx = \tfrac{1}{2} e^x (\sin x - \cos x).$$

5. Integrate $\sin^n \theta \, d\theta$, and find the value of the integral between the limits 0 and $\frac{1}{2} \pi$.

6. Find two terms of the expansion of $\log \sec x$.

7. Show that the least value of $a e^{n x} + b e^{-n x}$ is $2 \sqrt{a b}$.

8. Find the area of the rectangular hyperbola $x y = 1$ from $x = 1$ to $x = n$.

9. Find (1) the equations of a cycloid formed by a circle of radius a, (2) the length of the curve, (3) the volume of the solid formed by revolving the curve about the base.

10. Find the asymptotes of the curve $x y^3 + 3 y^3 = x^4$, and also the tangent at the origin.

11. Assuming that the radius of curvature of an ellipse $= b_1^3/ab$, find the length of the evolute of the ellipse.

12. Find the moment of inertia of a uniform sphere with respect to a diameter.

THIRD YEAR.

MATHEMATICS, II.

TUESDAY, APRIL 20TH:—MORNING, 9 TO 12.30.

Examiner, ... G. H. CHANDLER, M.A.

1. A point starts from A with a velocity u; find its distance from A at the end of a time t, the acceleration being proportional to t and in the direction of u.

2. Define the hodograph of a moving particle. When the hodograph is a straight line described with uniform speed, what do you infer as to the force acting on the particle?

3. What pressure will a man weighing 150 pounds exert on the floor of an elevator descending with an acceleration of 4 ft. per second?

4. Find the relation connecting small changes in g with the resulting small changes in the number of vibrations of a pendulum in a given time, and apply it to the following example: A clock keeps correct time at a place where $g = 32.24$, how much per day will it lose at a place where $g = 32.09$?

5. A belt passes over a pulley, covering a portion of the pulley which subtends an angle θ at the centre. Show that the ratio of the tensions on the two sides, when motion is about to begin, is $e^{\mu\theta}$.

6. An engine weighing 5 tons can haul 15 tons on a level, the coefficient of friction being .02; show that it can haul only $8\frac{1}{3}$ tons up a 1 per cent. grade.

7. Find the potential at a distance b from the centre of a uniform spherical shell of mass m.

8. The time of vibration of a pendulum is $\pi \sqrt{\frac{k^2 + h^2}{gh}}$ where k is the radius of gyration about an axis through the centre of gravity parallel to the axis of suspension, and h the distance between these axes.

9. A weight of mass W falls a distance h driving an inelastic pile of mass w a distance s against a resistance R. Show that the equation connecting these quantities is

$$\frac{W^2 h}{W + w} + (W + w)\, s = Rs.$$

10. Find the centre of pressure of a circle of radius r immersed vertically with its centre at a depth h.

11. A cylindrical diving-bell of height h is sunk until its top is a feet below the surface. Show that the height x of the air space in the bell is found from the equation $x^2 + (a + b)\, x = bh$, where b is the height of the water barometer.

12 Give an outline of the theory of the Planimeter.

THIRD YEAR ARTS; SECOND YEAR SCIENCE.

EXPERIMENTAL PHYSICS—HEAT, LIGHT AND SOUND.

Examiners, ... { JOHN COX, M.A.
H. L. CALLENDAR, M.A., F.R.S.

(*Not more than nine questions to be attempted.*)

1. Give the two general principles of the construction and action of electrical thermometers. Point out their advantages and disadvantages as compared with mercury thermometers in respect of quickness and accuracy, etc. In what special cases is it absolutely necessary to use the electrical method?

2. Describe the weight thermometer and the method of using it to find the coefficient of apparent expansion of a liquid. If the real coefficient is known, show how to deduce an accurate expression for the coefficient of expansion of the glass.

3. Explain what is meant by the terms "Absolute temperature," and "Perfect gas."

A cubic foot of air at 62° F and at the atmospheric pressure of 30 inches of mercury is compressed into the space of a litre at 100° C. Find its pressure.

4. Define the terms "Latent Heat" and "Thermal Capacity," and give one example of a method of measuring either.

Find the number of calories in a British Thermal Unit. (1 gramme = 15.43 grains avdp.)

5. Describe the apparatus used by Joule for determining the mechanical equivalent of heat by friction of water.

With a torque of 14.4 inch-pounds on the calorimeter, and a thermal capacity of 12 pounds, a rise of 4° F. was observed in 5,000 revolutions. Find the number of foot-pounds equivalent to 1 B. T. U.

6. Describe the mechanism by which the human voice produces (*a*) a particular vowel sound of definite quality, (*b*) the consonant *m*.

7. A stretched string 4 feet long vibrates in three segments with a frequency 300. Find the speed of the waves travelling along it. What must be the length of a stopped organ pipe which gives resonance with it?

8. Explain the terms *node*, *loop*, *beat*, as used in sound.

A tuning fork giving 560 vibrations per second is carried rapidly towards a smooth wall. A person standing farther from the wall than the fork in the line of its motion hears beats at the rate of 5 per second Find the velocity of the tuning fork, that of sound being 1120 feet per second.

9. Describe an ordinary Reading Telescope, and explain what is meant by focussing it "by parallax."

An object 20 feet distant from the object glass whose focal length is 1 foot, covers three divisions of a glass millimetre scale substituted for the cross hairs of the telescope. What is the size of the object?

10. Show that if D is the minimum deviation of a ray passing through a prism of index μ and angle i.

$$\sin \frac{D+i}{2} = \mu \sin \frac{i}{2}$$

Assuming this formula, explain a method of finding the index of refraction of a given prism by the Spectrometer, describing the instrument and its use.

11. Briefly explain:

(*a*) How it is that a mixture of blue and yellow lights is white, while blue and yellow paints make green.

(*b*) The difference between Fluorescence and Phosphorescence, with any suggestions towards a dynamical explanation of them.

12. White light is passed through two Nicol prisms successively. Describe the appearances on the screen as the second Nicol is rotated through a complete circle.

Why are *complementary* colours shown when a slice of crystal is interposed, and the second Nicol set parallel and at right angles respectively to the first?

B. A. ORDINARY EXAMINATIONS AND THIRD YEAR APPLIED SCIENCE.

ELECTRICITY AND MAGNETISM.

WEDNESDAY, APRIL 7TH :—MORNING, 9 TO 12.

Examiners,.... .... { JOHN COX, M.A. / H. L. CALLENDAR, M.A., F.R.S.

(*Not more than nine questions to be attempted.*)

1. In a *uniformly magnetised* bar magnet state the relations between the strength of pole, the intensity of magnetisation, and the magnetic moment. Sketch the lines of force, and explain how the magnetic flux of an ordinary magnet differs from the ideal case.

2. A bar magnet of length 10 cm. is placed horizontally with its N. pole pointing northwards. A small compass needle is found to be in neutral equilibrium at a height of 10 cm. vertically above the centre of the bar. If the horizontal intensity of the earth's magnetic field is .150, find the equivalent strength of pole of the magnet, and the total number of lines of force which belong to it.

3. Describe the nature of the magnetic field due to an electric current flowing in a long straight wire. How does the force vary with the distance from the wire, and how did Maxwell apply this case to the verification of the law of the inverse square? A compass needle held six feet below a trolley wire running N. and S. deflects 45° to the East. If H. = .150, find the direction and strength in amperes of the current.

4. State the law of Joule for the heating effect of a current. Define potential difference, and deduce Ohm's law for the case of a homogeneous metallic conductor. With a battery of four dry cells of half an ohm resistance each, giving 1.5 volts each on open circuit, what voltage lamp would you select to give the best light at 4 watts per c. p.? Give the current, resistance, and efficiency.

5. Define Specific Resistance, and state how it varies with change of temperature. Find the resistance of a copper wire (specific resistance at 0° C. = 1.6 microhms) one millim. in diameter and 1 kilometre long, at 0° C. and also at 20° and 100° C.

6. Explain the principle of the potentiometer or slide-wire method of comparing resistances and E. M. F.'s. Describe the Clark standard cell and the precautions to be observed in using it.

7. Define Electro-Static Capacity; and show that the energy of a Leyden Jar, capacity C, and charge Q, is $\frac{1}{2}\frac{Q^2}{C}$.

A micro-farad is charged up to 500 volts. Calculate its energy in ergs.

8. Describe a Ballistic Galvanometer, and a method of using it to compare the capacities of condensers.

Prove that the quantity of electricity sent through the Galvanometer is proportional to the sine of half the first throw.

9. Explain the action of the Water-dropping Accumulator.

10. Find (*a*) the magnitude and direction of the force experienced by a straight vertical wire 50 centimetres long carrying a current of 10 amperes downwards in a uniform horizontal north and south field of 8,000 lines per square centimetre.

(*b*) The E. M. F. produced in the same wire when it is carried due east through the field 10 metres per second.

11. Describe (*a*) a method of Duplex Telegraphy.

(*b*) Some of the chief properties of Kathode Rays?

12. Explain (*a*) why a Galvanometer is made dead-beat by enclosing the magnet in a massive copper chamber.

(*b*) The action of some form of Interrupter for an Induction Coil.

SECOND YEAR.

HISTORY OF ARCHITECTURE.

WEDNESDAY, APRIL 14TH:—2 to 5.30 p.m

Examiner,.....S. H. CAPPER, M.A., A.R.I.B.A., A.R.C.A.

Directions to Candidates.

1. All candidates are expected to answer question 12; and are at liberty to select at pleasure among the other questions.

2. The percentage of marks assigned to each question is given in brackets. Candidates are only required to answer questions corresponding to a total of 100, but are at liberty to answer additional questions, in which case the percentage values of all the questions attempted will be proportionately reduced, so as to give a maximum of 100 over all.

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1. Compare and contrast the religious architectures (*i. e.*, temples or churches) of the following races and periods :—
   (*a*) Ancient Egyptian ;
   (*b*) Ancient Greek ;
   (*c*) Early Christian (in Italy) ;
   (*d*) French Gothic. (20)

2. Give a general account of Greek Ionic Architecture. (15)
   (N.B.—Detailed description of special buildings not required.)

3. Criticize Roman Architecture as on the one hand a derivative from Greek and on the other the origin of Romanesque. (20)

4. Give an account of the development of vaulting from Roman to Early Gothic Architecture.

5. Write a note on the use of Sculpture in Architecture. (10)

6 Give some account of English Gothic Architecture, comparing and contrasting it with French. (20)

7. Comment briefly upon the influence of the Monastic Orders upon the development of Mediæval Architecture. (10)

8. Contrast (with sketches) the Greek and the Egyptian treatment of the column. (15)

9. Consider briefly the use of the Dome in Roman and post-Roman Architecture. (15)

10. Describe (with sketch plans) St. Peter's, Rome. (15)

11. Give some account of the rise of Renaissance Architecture in Italy, adding brief notes of the early Renaissance styles of France *or* England. (20)

12. There are exhibited in the examination room for study and reference, views of the following buildings :—

A.

(1) West fronts of the Cathedrals of Paris and of Reims.
(2) The west front of the Norman Abbaye aux Hommes (Caen) and the east end (including transepts) of St. Sernin, Toulouse.
(3) Interior views of Canterbury Cathedral (choir looking east) and York Cathedral (north transept looking north).

B.

(1) The west fronts of Chartres Cathedral (France) and of Battle Abbey (the most noteworthy Gothic Church in Portugal).
(2) The angle between the south transept and choir of York and Winchester Cathedrals.
(3) Two French Norman interiors, the Churches of Vignory and of St. Martin de Boscherville.

Selecting out of these six pairs one from each group (A. and B.), give a concise architectural description of the buildings as illustrated, and define and comment on the architectural forms and features exemplified, indicating, as far as possible, the probable dates of the work.

In addition, do the same for any one other pair of these six, *or*, alternatively, describe from memory *one* of the following buildings :—

(*a*) The Parthenon.
(*b*) The Pantheon.
(*c*) Sta. Sophia.
(*d*) St. Mark's, Venice.
(*e*) Durham Cathedral.
(*f*) A Renaissance Palace in Italy.

(30)

THIRD AND FOURTH YEAR EXAMINATIONS.

THEORY OF STRUCTURES (*Paper I*).

Examiners, ... { HENRY T. BOVEY, LL.D., M.INST.C.E.
HERBERT W. UMNEY, A.M.INST.C.E.

1. Deduce the formula

$$a_1 = u\left(1 + \frac{s - u}{u}\,\phi\right)$$

for structural members subjected to stresses which are alternately tensile and compressive.

The stresses in the diagonal of a truss vary from a maximum tension of 100,000 lbs. to a minimum compression of 80,000 lbs. Find the proper sectional area of the diagonal, (*a*) if of steel, (*b*) if of wrought-iron, 3 being a factor of safety.

For steel . $u = 49{,}500$ per sq. inch $s = 27{,}000$ lbs. per sq. inch.
" wrought-iron $u = 30{,}000$ " $s = 15{,}000$ "

2. A weight of W_1 tons falls h feet upon the head of a pile weighing W_2 tons and drives it a feet into the ground against a mean resistance R, the head of the pile being crushed for an appreciable length x feet. Investigate the action.

3. Show that the intensity of stress at any point of a plane in a strained solid is the resultant of two constant intensities, viz.,

$$\frac{p_1 + p_2}{2} \quad \text{and} \quad \frac{p_1 - p_2}{2},$$

the former being normal to the plane.

4. In the base MN of a wall O is the middle point and F is the centre of pressure. If $MF = x$ and if $MN < 6.OF$, shew that $2R = 3fx$, R being the total pressure on the base and f the maximum intensity of stress.

The front and rear faces of a wall retaining water level with the top have a batter of 1 in 12. The height of the wall is 24 feet. Find the thickness of the wall, (*a*) if $q = .25$, (*b*) if max. intensity of stress is nowhere to exceed 12,000 lbs. per sq. feet.

Weight of masonry = 125 lbs. per cubic foot.

5. Deduce the relations

$$\frac{E}{R} I = M = \frac{f}{c} I$$

for a beam loaded transversely, clearly stating all the assumptions made.

A 2 inch × 1 inch bar is bent into the arc of a circle of 1,000 feet radius. Find the moment of resistance, E being 30,000,000 lbs. Also find the greatest intensity of stress in the metal.

6. A tension bar of T section, the flange being 2 inches × $\frac{1}{2}$ inch, and the web 4 inches × $\frac{1}{2}$ inch, is subjected to a force having its line of action 1 inch from C of G of the section. Find the maximum and minimum intensities of stress in the metal.

7. In a cast-iron beam the area of the web is five times the area of the tension flange, the depth of the beam is 9 inches, and the unit stresses are 2 tons per sq. inch in tension and 4 tons per sq. inch in compression. The maximum moment of resistance is 162 inch tons. Find the flange and web areas. Find the length of this beam so that its stiffness may not exceed .001.

8. Deduce the relation

$$q\ w = \frac{S}{I} A \bar{y}$$

A steel girder consists of a 24 inch $\times$ $\frac{1}{2}$ inch web, rivetted to two 12 inch and $\frac{1}{2}$ inch flanges by means of four angle-irons each 4 inch $\times$ 4 inch $\times$ $\frac{1}{2}$ inch. Find the diameter of the rivets, the pitch being 4 inches.

9. State Rankine's modification of Gordon's formula, pointing out any special advantage it may possess.

Find the strength of a steel column with both ends fixed, 22 feet in height, and having a section double-tee in form. The equal flanges are each 25 inch $\times$ .96 inch, and are connected by a 12 inch $\times$ 1 inch web.

$$\left(\frac{l}{a_2} = 44{,}000, f = 53{,}770 \text{ lbs.}\right)$$

10. If the load upon the column in the preceding example is 25,000 lbs., find the greatest deviation of the line of action of the load from the axis of the column, consistent with the condition that the maximum intensity of stress is not to exceed 10,000 lbs. per sq. inch.

$$\left(E = 31{,}500{,}000 \text{ lbs.}, P = 4\ EI\ \frac{\pi^2}{l^2}\right)$$

11. Shew that a hollow shaft is both stiffer and stronger than a solid shaft of the same length and weight.

12. A $3\frac{1}{2}$ inch steel shaft is subjected to a twisting couple of T feet lbs. and a bending moment of $\frac{3}{4}\ T$ feet lbs. Find the value of T, so that the stress in the shaft may not exceed 15,000 lbs. per sq. inch.

Find the total torsion of this shaft, G being 12,000,000 lbs.

13. A horizontal girder AC, carrying a uniformly distributed load of intensity w, is fixed at A, rests upon a support at C, and is hinged at B, dividing the girder into the segments $AB = a$ and $BC = b$. Find (1) the reactions at A and C, (2) the moment of fixture, (3) the deflection at B.

14. Enunciate and prove the Theorem of Three Moments.

15. A continuous girder of three spans carries a load of 1 ton per lineal foot. The two side spans are 28 and 84 feet in length, and the intermediate span is 56 feet in length. Find the reactions and bending moments at the intermediate supports, (a) when the two ends rest upon the supports, (b) when the end of the 28 foot span is fixed at the support.

THIRD AND FOURTH YEAR EXAMINATIONS.

THEORY OF STRUCTURES (*Paper II*).

Examiners, ... { HENRY T. BOVEY, LL.D., M.INST.C.E.
HERBERT W. UMNEY, A.M.INST.C.E.

1. Draw the funicular polygon for six forces of 1, 2, 3, 4, 5, 6 tons at angular distances of 60° as in Fig. 1.

Also explain how to determine graphically the moment of the loads with respect to any point on the line of action of the 6 ton force.

2. Find graphically the moment of inertia of a cast-iron beam of double-tee section. The top flange is 9 inches × 3 inches, the bottom flange 15 inches × 3 inches, and the web 12 inches × 3 inches.

3. A horizontal girder of 16 feet span carries loads of 1, 2 and 3 tons at distances from the support of 2 feet, 6 feet and 10 feet respectively. Determine graphically the maximum bending moment.

4. In the pier shewn by Fig. 4 the lines CA and DF are inclined to 30° vertically. A weight of 20 tons is concentrated at each of the points C and D; a horizontal load of 10 tons is concentrated at each of the points C and B. Draw the stress diagram.

5. Draw the stress diagram for the frame shewn by Fig. 5, and determine the vertical forces at the extremities of the base.

6. Draw the stress diagram for a lean-to roof as in Fig 6.

7. The truss in Fig. 7 has a span of 30 feet, and is loaded as indicated. Determine the stresses in all the members.

If the strut BC is removed, shew graphically how the stresses in the remaining members will be modified.

8. In the frame shewn by Fig. 8, a load of 1 ton is concentrated at B. Find the loads which must be concentrated at C and D so that no deformation of the frame may take place.

If a load of 1 ton is concentrated at each of the points B and C, explain how the truss should be modified, and find what load should be concentrated at D to prevent deformation of the truss.

Show how the truss must be modified if a weight of 1 ton is concentrated at each of the points B, C and D. Draw the stress diagram.

9. Fig. 9 represents the skeleton diagram of a Warren Truss loaded as indicated. Draw the stress diagram.

B.A.Sc. EXAMINATIONS.

THEORY OF STRUCTURES (*Paper III*).

Examiners, ... { HENRY T. BOVEY, LL.D., M.INST.C.E.
HERBERT W. UMNEY, A.M.INST.C.E.

1. Draw a stress diagram for the compound roof shown by Fig. 1.

2. Prepare tables of stresses in all the members of the two trusses shown by Figs. 2 and 3. The length of each truss = 42 feet; the depth of each truss = 8 feet; the panel engine load = 6 tons; the panel train load = 3 tons; the panel dead load = $1\frac{1}{2}$ tons.

3. Fig. 4 represents a swing-bridge with counterweight extending over *BC*. The panel dead load of the bridge is 1 ton. Find the counterweight and draw the stress diagram for the bridge when open.

When the bridge is closed, find the reactions at each support and draw the stress diagram for the whole bridge.

B.A.Sc. EXAMINATIONS.

THEORY OF STRUCTURES (*Paper IV*).

Examiners, ... { HENRY T. BOVEY, LL.D., M.INST.C.E.
HERBERT W. UMNEY, A.M.INST.C.E.

1. A horizontal platform carrying a uniformly distributed load is suspended from a cable. Shew that the curve of the cable is a parabola.

2. The platform for a bridge of 800 feet span is carried by two cables (one on each side). The vertical distance between the top of the abutment and the lowest point of the cable is 180 feet on one side and 20 feet on the other. Determine (*a*) the length of a cable, (*b*) the tensions in the cable at the two abutments, (*c*) the tension at the lowest point of the cable.

3. Find the change of temperature which will produce a depression of 6 inches at the lowest point of the cable, and also find the corresponding flange-stress in the stiffening truss which is 24 feet deep. (E = 8000 tons).

4. Shew how to design a stiffening truss hinged at the centre.

5 Explain what is meant by the line of resistance in an arch, and shew how to define the joint of rupture.

6. A masonry arch of 96 ft. span and 24 ft. rise, with a parabolic intrados and a horizontal extrados, springs from abutments with vertical faces, the outside faces being carried up to meet the extrados. The depth of the masonry at the key is 6 feet. The centre of pressure is 2 feet from the extrados at the key, and at the middle of the joint at the springing. The

masonry weighs 150½ lbs. per cubic ft.; width of abutment = 12 feet. Find the resultant pressures at the key and at the springing.

7. Explain the object of the transformed catenary, and shew how to deduce the modulus of the true catenary.

Determine the transformed catenary, the thrust at the springing and the curvatures at the crown and springing for a concrete arch of 40 feet span and 10 feet rise, the depth of the masonry above the crown being 5 feet.

8. Prove that the bending moment at any point E of an arched rib is Hx, H being the horizontal thrust and x the vertical distance between E and the linear arch.

9. A parabolic rib of 48 feet span and 12 feet rise carries a weight of 1 ton at the centre and at two points each 12 feet (measured horizontally) from the centre.

Determine the horizontal thrust on the rib and draw the linear arch. Find the thrust and shears at the points at which the weights are concentrated.

THIRD YEAR.

TESTING LABORATORY.

SATURDAY, MARCH 27TH.

Examiners, ... { HENRY T. BOVEY, M.A., LL.D.
CECIL B. SMITH, MA.E.

(A) TESTING.

(1.) Floor beams 12″ deep, 6″ wide, 16′ span, are to carry a uniformly distributed load of 100 lbs per square foot, of floor surface, taking E = 1,200,000, calculate the correct spacing of beams, (*a*) f = 1000 lbs., (*b*) deflection of $\frac{1}{5}$″ allowed.

(2.) Compare the White and Red Pine, Douglas Fir and Oak beams tested transversely in the laboratory.

(3.) What factor of safety is used when a Red Pine Pillar 12″ x 10″ x 20′ long, carries a load of 96,000 lbs., taking C = 25 in Johnson's straight line column formula.

(4.) What ratio of $\frac{l}{r}$ will make 500 lbs per sq. inch, a safe load for a pillar that would carry 1200 lbs. per sq. inch as a short specimen? (a = $\frac{1}{6000}$ in Rankine column formula.)

(5) Describe the Emery testing machine with sketches and methods of use in making pillar tests.

(6) Describe a transverse test of a timber beam, stating notes to be taken, results to determine, with sketches of Wicksteed machine and other appliances necessary for a complete test.

(7) What are the characteristic fractures of good W. I. mild steel, machine steel, cast steel and cast iron, when tested to destruction in tension? Why?

(8) What are the breaking loads per square inch of good W. I. mild steel and cast iron in tension?

(9) Design the following timber joint in tension so that it will have equal factors of safety for all stresses. (See sketch).

The main timbers being of white pine and keys of oak.

(10) What tests are made in workshop and testing room on Iron or Steel.

Describe, in detail, a tension test of mild steel, giving average values of constants and facts recorded.

(11) What is the strength of ordinary brickwork in walls laid in cement mortar of proportions, 3 sand, 1 cement. Is brick or mortar stronger at (1) week old, (2) 1 month old?

(12) If we test a rectangular cast iron bar transversely, and obtain a modulus of rupture $f = 45{,}000$, what does this mean? Explain how a more accurate idea of the skin stresses can be obtained, developing ideas (*a*) of work done, (*b*) of neutral axis position, (*c*) obtain equations for use in rectangular sections.

(B) MATERIALS.

(1) Mention various methods of seasoning wood, and describe two methods, in detail.

(2) Describe dry and wet rot in timber.

(3) Describe the method of life and general effects on timber of the Teredo Navalis; name other animal enemies of timber.

(4) Give details of method of treating timber with creosote, name several other preservatives. What timbers receive most benefit by such processes?

(5) Sketch, carefully, vertical sections of charcoal and coke furnaces with dimensions. What are the materials used and manner of charging and working them? why are fluxes used? what are the objects to be attained in a smelting furnace?

(6) Point out the special qualities of cast iron as compared with wrought iron or steel.

(7) Comment on the proportions of combined and graphitic carbon in cast iron; how caused; and consequent mechanical properties.

(8) What is puddling? Describe the wet process by the Regenerative furnace, including sketches and description of method of using and principles involved.

(9) What effects have carbon, sulphur, manganese and phosphorus on wrought iron or steel?

10) Describe the acid Bessemer process of making steel.

(11) What is annealing? what are its effects on steel?

B.A. Sc. EXAMINATIONS.

HYDRAULICS (*Paper I*).

MONDAY, APRIL 12TH :—MORNING, 9.

Examiners..... { HENRY T. BOVEY, LL.D., M.I.C.E. HERBERT W. UMNEY, A.M.I.C.E.

1. In a stream moving steadily and without friction shew that the energy in ft. lbs. per cubic foot of water is

$$p + w\left(z + \frac{v^2}{2g}\right)$$

distributed uniformly along a stream-line.

One cubic foot of water per second flows steadily through a frictionless pipe At a point *A*, 100 feet above datum, the sectional area of the pipe is .125 sq. ft., and the pressnre is 2,500 lbs. per sq. ft. Find the total energy.

At a point *B* in the datum line the pressure is 1,250 lbs. per sq. ft., and the sectional area is .0625 sq. ft. Find the loss of energy between *A* and *B*.

2. Shew how to find the "loss of energy" due to an abrupt change of section.

Find the "loss in shock" in the preceding example, if the sectional area at *B* abruptly changes (*a*) from .125 sq. ft. to .0625 sq. ft; (*b*) from .0625 sq. ft. to .125 sq. ft.

3. Shew that the coefficient of contraction in a Borda's mouthpiece is .5.

If the mouthpiece runs full, shew that the coefficient of discharge is $\frac{1}{\sqrt{2}}$

4. The water in a vessel 9 feet in height and 2 feet in diameter is 8 feet

deep. In what time would one-half of the water flow away through an orifice in the bottom 1 inch in diameter?

If the orifice is closed and the vessel is made to rotate about its axis at the rate of $76\frac{4}{11}$ revolutions per minute, to what height will the water rise on the vessel's surface? If the orifice is opened, find velocity of efflux when the surface at the axis is 3 feet above the orifice. Also find the difference of pressure-head in a horizontal plane 6 inches from the axis.

5. In a canal 16 ft. wide, the water runs 4 ft. deep. The slope is 3 in 2560. If $f = .008$, find the velocity and volume of flow.

The depth is increased 25 per cent. by a weir (drowned) built across the canal. Find the height of the weir, taking into account the velocity of approach.

6. For water flowing steadily through a pipe, deduce the formula,

$$\frac{h}{l} = i = \frac{f}{m}\frac{v^2}{2g}$$

The delivery at the end of a 3 inch pipe is 11.06 H.P. The total effective head at the entrance to pipe is 896 feet. The loss in frictional resistance is 21 per cent. Find the distance to which the energy is transmitted.

7. An engine pumps a volume of Q cubic feet of water per second through a hose 1 foot in length and d feet in diameter, having at the end a nozzle D ft in diameter. Find the pumping H.P. and apply your result to the determination of the H.P. of an engine which is to pump 30 cubic feet of water per minute through a 1 inch nozzle at the end of a 3 inch hose 400 feet in length ($f = .00625$).

Also find the force required to hold the nozzle.

8. A 6 in. pipe, 4,000 feet in length, leads from a reservoir A to a point O, at which it divides into two 6 inch branches, each 4,000 feet in length, the one leading to a reservoir B, the other to a reservoir C. The surface of the water in A is 100 feet above that in B and 200 feet above that in C. Find the velocities and quantities of flow in the three branches.

$$\left(a = \frac{f}{g} = .0002\right)$$

9. Shew how to determine the fall of free surface level in a line of piping due to sudden change of section, frictional resistance, etc.

10. Shew how to deduce Bernouilli's Theorem from the General Equations.

11. Assuming that the motion of water in a pipe is in the form of the cylindrical shells, shew that the velocity of any shell of radius x may be expressed in the form

$$u = \frac{A}{4}x^2 + C$$

A and C being constants of integration.

12. For an open channel of varying cross-section and slope, deduce the relation

$$\frac{dh}{ds}\left(1-a\,\frac{u^2 x}{gA}\right) = i\left(1-\frac{f}{m}\,\frac{u^2}{2gi}\right)$$

B.A.Sc. EXAMINATIONS, 1897.

HYDRAULICS (*Paper II*).

TUESDAY, APRIL 13TH :—MORNING, 9.

Examiners,..... { HENRY T BOVEY, LL.D., M.INST.C.E.
HERBERT W. UMNEY, A.M.INST.C.E.

1. A vane is in the form of the segment $A\,B$ of a circle subtending an angle of 120° at the centre O. A stream of water, moving with a velocity v_1, strikes the vane tangentially at A and drives it in the same direction with a velocity u. Find the velocity (v_2) with which the water leaves the vane, and shew that it leaves in the direction $O\,B$, if $v_1 = 2\,u$, and that the direction has turned through 90° if $v_1 = 3\,u$. Find the efficiency in the two cases, and shew that $v_1 = 3\,u$ corresponds to max. efficiency.

2. Shew that the velocity (v) of the piston in the working cylinder of a pressure engine and the pressure-intensities p_0, at accumulator ram, and p in working cylinder are connected by the relation

$$\frac{p_0 - p}{w} = K\,\frac{v^2}{2g}$$

3. 72 cubic feet of water per second are delivered to an undershot wheel with straight floats, through a channel of rectangular section and 5 ft. wide. The velocity (v_1) of the inflowing water is 24 ft. per second. If the efficiency of the wheel is .25, shew that the peripheral speed (u) of the wheel must be 6 ft. per second.

Also determine the mechanical effect of the wheel.

4. Point out the disadvantages of a wheel with straight floats, and explain in what manner they are modified in a Poncelet wheel.

5. 10 cubic feet of water per second are delivered to a breast-wheel. The total fall is 10 feet. The peripheral velocity of the wheel is 6 ft. per second. If $p_1 = 2\,u$ and if $\gamma = 30°$, find the theoretical useful effect and the theoretical efficiency.

6. In an overshot wheel, deduce the relation

$$r_1\frac{\omega^2}{g} = \frac{\sin\phi}{\cos(\theta+\varphi)}$$

7. In a turbine or centrifugal pump shew that the effective work is

$$\frac{w\ Q}{g}\left(v'_w u_1 - v''_w u_2\right)$$

8. In an impulse outward-flow turbine of 10 B. H. P. working under a head of 9 ft., $\gamma = 22\frac{1}{2}$; $\pi - \alpha = 37\frac{1}{2}$; $\beta = 33\frac{3}{4}°$, $9\ (r_2 - r_1) = r_1$, $d_1 = .2r_1$. There is a loss of 5 % due to friction in the velocity at entrance. Find the efficiency (η), the volume of water passed per second, and the diameter of the turbine.

9. Shew how to design a downward-flow turbine.

10. A turbine delivers 1 cubic foot of water per second. The water leaves the outlet periphery radially ($v''_w = 0$). The vane lip at inlet is radial ($\alpha = 90°$). The direction of inflow makes an angle of 60° with the wheel's periphery. The radius of inlet surface is 2 ft. The number of revolutions per minute is 100. If the efficiency is 90 %, find the head and the effective work done.

11. State the essential differences between turbines and centrifugal pumps.

12. The lift of a centrifugal pump is $24\frac{3}{4}$ ft. The efficiency of the pump is .75, and the radial velocity of flow at outlet surface of fan is 5 feet per second. If cot $\beta = 4$, find the peripheral speed of the fan.

Also find its diameter, if the fan makes 160 revolutions per minute ($v'\ w = 0$).

Find the loss of head in hydraulic friction.

B.A.Sc. EXAMINATIONS.

HYDRAULIC LABORATORY.

MARCH 20TH :—9 A.M.

Examiners;.... ..... { HENRY T. BOVEY, LL.D., M.INST.C.E.
R. S. LEA, MA.E.
HERBERT W. UMNEY, A.M.INST.C.E.

N.B.—It is most important that the answers to the following questions should be fully illustrated with sketches and diagrams. Credit will be given for the same proportion to their accuracy and neatness.

1. A jet issues from a sharp-edged orifice. Shew how to determine experimentally the coefficient of discharge, and explain how provision must be made for changes of temperature.

2. Describe in detail the method you would adopt to test the loss of head due to a bend or elbow in a pipe of small sectional area.

3. How would you determine experimentally the Coefficient of Impact?

4. How would you test a Rife's Hydraulic Ram?

5. Explain how you would conduct a test of a Pelton Wheel, and describe with sketches the apparatus required. Prepare a table shewing the observations taken and the result obtained.

SECOND YEAR.

SURVEYING—(*First Paper.*)

THURSDAY, APRIL 8TH :—9 TO 12 A.M.

Examiners, ... { C. H. McLEOD, M.A.E. / J. G. G. KERRY, MA.E.

1. It is required to measure precisely the length of a line over very hilly ground. Write down all the equipment you would desire to make this measurement, and describe how you would perform the operation.

2. In making a chain survey a deep river is encountered. Show by sketch and description how you would measure your line across it.

3. An observation on Polaris at its western elongation is made, and the direction of the line of sight marked on the ground. A compass is set up on this marked line and its bearing reads N. 7° W. If the latitude is 45° and the star's polar distance 1° 15′, find the declination of the compas needle.

4. Why are prismatic and surveyors' compasses graduated so that the east point in one is marked where the west point is marked in the other?

5. What is reciprocal levelling, and when is it required? Mention the principal precautions to be observed in ordinary levelling.

6. The following are the notes of a compass and chain survey:

N. 12¼ E., 269.
N. 76 E., 300.
S. 24½ W., 130.
S. 48 E., 141.
S. 12½ E., 97.

Suppose this survey to have been run as a traverse survey by transit and stadia, using N. 5 W. as the initial meridian. Write down the notes as they would then be taken, f is 9 inches, c is 6 inches and the stadia constant 100.

7. Describe how you would adjust the telescope bubble and the zero of the vernier of the vertical circle of a transit theodolite.

8. If you were required to plot an angular survey at a time when neither protractor nor mathematical tables were obtainable, how would you proceed?

SECOND YEAR.

SURVEYING—(*Second Paper*).

THURSDAY, APRIL 8TH:—2 TO 5 P.M.

Examiners, ... { C. H. McLEOD, MA.E. / J. G. G. KERRY, MA.E.

1. A pace and compass survey of a road is made by a man who makes 120 paces, each 30 inches long, in a minute. He notes at each angle of the road the time that he arrives there and the bearing of the road ahead of him. His notes are as follows:—

Time, h. m.	Bearing.
10.12	N. 69 E.
10.29	S. 74 E.
10.42	S. 6 E.
11.00	S. 46 W.
11.19	N. 78 W.
11.30	

What direction must he now take and for how long must he walk to reach the point he started from?

2. A survey of a lake is made with compass and double image micrometer, and the notes are as follows:

N. 12¼ E.	1.20 revolutions.
N. 76 W.	1.07 "
S. 24½ W.	2.76 "
S. 48 E.	2.09 "
S. 12½ E.	2.81 "
S. 77 E.	1.96 "

The distance between the targets is 2 feet, the focal length 15 inches, and the pitch of the double screw 1-10 inch. The micrometer reads 0.13 revolutions in its zero position. Plot this survey accurately, and determine the area of the lake from the plan.

3. In levelling over a line the following notes were taken:

Sta.	B. S.	H. of I.	Int.	F. S.	Elev.
B. M.	5.42				106.93
201			1.9		
+30			9.5		
202			11.3		
T. P.	2.91			11.46	
203			2.7		
204			1.3		
+50			4.9		
205			11.5		
206			10.2		
B. M.				10.16	

Reduce these notes, and determine what the cut or fill at each point would be when the grade height at 201 is 105.0, and the grade is falling at 2.00 per 100.

4. Determine whether the transit is in adjustment for the measure of horizontal angles (first three adjustments), and if not, state what parts require moving and in what direction.

5. Determine whether the hand level is in adjustment, and if not whether the line of sight falls above or below the horizon.

NOTE.—Candidates are cautioned that as this is a practical examination, accuracy will be the first requisite in all answers.

SURVEYING AND PRACTICAL ASTRONOMY (*First Paper*).

THIRD YEAR.

SATURDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners,..... ..... { C. H. MCLEOD, MA.E. / J. G. G. KERRY, MA.E.

1. Under what conditions and to what extent would you rely upon aneroid barometer determinations of height in Engineering operations? What precautions would you adopt in making such observations? (*a*) Obtain a formula for the reduction of barometer readings to differences of altitude.

2. Two "tangents" intersect at an angle of 43° 19′. A 2° 15′ curve is started at 794 feet from the point of intersection and run for 407 feet.

Taking this point as a P. C. C., determine the degree and length of curve required to reach the other tangent, and also the distance between the point of intersection and the E. C.

3. It is required to make a contour survey of ground 10 acres in area. Describe clearly how you would conduct the work; how many assistants you would employ, their duties, and give a list of the instruments you would employ.

4. A river 2,000 feet wide is to be sounded from a boat. Give three methods of fixing the positions of the soundings. Name the instruments you would employ and give their positions.

5. Describe (*a*) the method of making soundings at sea for depths beyond 50 fathoms, (*b*) the measurement of the velocity and direction of currents at great depths.

6. Show how to determine the azimuth of a line from observations of the sun at equal altitudes, and derive the expression for the correction to be applied to the mean position.

7. Show that in the use of the astronomical transit, the correction in hour angle due to an azimuth error a is $a \sin z$. Sec δ. (*a*) When is this correction added and when subtracted from the observed time?

8. What is the zero of the sidereal day? (*a*) Express the relation between the length of the sidereal and mean solar day.

9. If a star in declination 60° be observed on one of the wires of an astronomical transit at a time m and the equatorial interval of the wire is $-e$, what is the corresponding time of passage over the mean wire (*a*) when the star is above the pole, (*b*) when it is below the pole.

10. If you were in an unknown position without a knowledge of time, how would you determine latitude by the sextant?

11. How is a ship's position at sea determined by solar observations?

12. How may the value of refraction in Geodetic work be determined? (*a*) Derive the formula which you would employ in your method.

THIRD YEAR (*Second Paper.*)

SURVEYING AND PRACTICAL ASTRONOMY.

SATURDAY, APRIL 10TH :—AFTERNOON, 2 TO 5 P.M.

Examiners, ... { C. H. McLEOD, MA.E. / J. G. G. KERRY, MA.E.

1. The vertical wall of a house bears S. 60° E. in latitude 40° N. Find the position of the stylus and the hour marks for a sun dial on the wall, between 9 a.m. and 4 p.m.

2. The observed altitude of *polaris* at $10^h\ 30^m$ sidereal time on April 7th, 1897, was 44° 25′ 30″. Find the latitude of the place.

3. Calculate the time of sunrise at Montreal to-day.

4. Determine with the sextant the *horizontal* angle between the points A and B from C.

5. Examine the transit theodolite for its adjustment, and if you find any errors state the direction and extent of the same.

6. Determine the value in seconds of arc of one division of the level. (*a*) Calculate the error in a rod reading at a distance of 270 feet due to the bubble being one division out of centre.

7. A, B and C are points situated as in the blackboard sketch. Observations were made as follows :—

at D,	A	B	subtends	61° 00′	and	B C subtends	40° 55′
" E	"	"		40° 00′		"	59 50′
" F	"	"		21° 00′		"	23° 55′

Find graphically the distance from D to E and from E to F.

B.A. Sc. EXAMINATION.

GEODESY AND PRACTICAL ASTRONOMY (*Paper I*).

WEDNESDAY, APRIL 7TH :—MORNING, 9 TO 12.

Examiner, ... C. H. McLEOD, MA.E.

1. Show that the eccentricity of graduated circles is eliminated by the means of two microscopes 180° apart. (*a*) Show how to measure the value of eccentricity.

2. Explain the complete adjustment of a quadrilateral figure on the supposition of all the angles being equally well observed.

(*a*) Suppose the angles to be not equally well observed, how would the reduction be modified ?

3. Describe Colby's base line apparatus and the method of using it.

(*a*) Describe also the *iced-bar* apparatus and its use as recently employed by the United States Coast and Geodetic Survey.

4. What are the corrections to be applied to measurements of base lines by wires ? Find the correction for "sag."

5. Discuss the "frame work" of large triangulation surveys in relation to the territory to be covered. Show how the expansion from the base line is effected. Describe generally the reconnaissance for such a survey, having special reference to the intervisibility of stations and the means to be adopted to secure this, in special cases.

6. Obtain a formula for the computation of the area embraced between two meridians and two parallels.

7. Obtain an expression for the correction to *azimuth* due to inclination of the horizontal axis of the telescope.

8. Discuss the determination of time by the astronomical transit : (*a*) adjustments of instrument and measurement of instrumental errors ; (*b*) bringing the instrument into the meridian ; (*c*) selection of the star list ; (*d*) elimination of instrumental errors ; (*e*) elimination of the personal errors of the observer ; (*f*) reduction of the observations.

B.A. Sc. EXAMINATION.

GEODESY (*Second Paper.*)

WEDNESDAY, APRIL 7TH :—2 TO 5 P.M.

Examiner,..... ....C. H. McLEOD, M.A.E.

1. The observed altitude of the sun's centre on Feb. 5th, 1897, at $3^h\,08^m$. p.m. local mean time in Montreal (latitude $45°30'26''$) was $17°13'$. Calculate the azimuth of the sun at the time of the observation.

2. Determine the value of run in the microscope "A" of the theodolite.

3. Find the difference in the two mean time chronometers by comparison with the siderial chronometer.

4. The following observations were made with the Kew magnetometer: Time of swing of magnet 4.5853 sec. Deflections of magnet at 30 c.m. and 40 c.m. 23° 53′30″ and 9°48′20″.

The log of $\pi^2 \text{ I} = 3.42144$ at the observed temperature; calculate value of H.

FIRST YEAR.

GEOMETRICAL DRAWING.

MONDAY, APRIL 5TH:—AFTERNOON, 2 TO 3.30 P.M.

Examiners, ... { C. H. McLEOD, MA.E. / H. F. ARMSTRONG.

1. Construct an ellipse by means of intersecting arcs, major axis 4 inches, minor axis 2½ inches.

2. Inscribe a regular heptagon (seven sides) in a circle 2½ inches diameter.

3. The centre of a circle of 2 inches diameter is 1½ inches from a straight line of indefinite length. Describe a circle to touch the given circle, and also touch the given line at a point 2½ inches from the centre of the given circle.

4. Draw the epitrochoidal curve described by a point 0·25 inch without the rolling circle which is one inch in diameter and has a directing circle of 2 inches diameter.

5. Draw a portion of the involute of the ellipse in problem 1.

FIRST YEAR.

DESCRIPTIVE GEOMETRY.

MONDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiners, ... { C. H. McLEOD, MA.E. / H. F. ARMSTRONG.

1. A right cylinder, 1⅝ in. dia. of end and 2½ in. long, stands on the horizontal plane. A sectional plane at an angle of 60° with the horizontal passing through the cylinder meets the axis at a point ¾ inch from

an end. Show the development of the surface of the cylinder and the section line on it.

2. A pyramid whose base is a regular pentagon has an altitude of 2 in. and the edge of the base is 1 inch. Find the plan and elevation when the pyramid has its axis horizontal, but inclined to the vertical plane at an angle of 45°, and a diagonal of the base is vertical.

3. A cone the diameter of whose base is $1\frac{3}{4}$ inch and axis $2\frac{1}{2}$ in. is so inclined that its base makes an angle of 60° with the horizontal. Find its plan and also an elevation on a plane making an angle of 45° with the axis of the cone.

4. Find the plan and elevation of a prism whose end is $1\frac{1}{2}$ in. square and long edges 3 inches, when the long edges are inclined at 45° to the horizontal plane, and 30° to the vertical plane.

5. A cylinder stands vertically on the horizontal plane and is penetrated by a square prism whose axis is horizontal and makes an angle of 30° with the vertical plane. Their axes bisect each other at right angles and a diagonal of each end of the prism is vertical. The diameter of the cylinder is 2 inches and length 3 inches. The diagonal of an end of the prism is $1\frac{3}{4}$ inch and the length of the prism 4 inches.

6. A triangle A. B. C. is so situated with respect to the projection planes that A. B. and C. are respectively 1.0 inch, 0.5 inch and 0.25 inch above the horizontal, and 0.25 inch 0.75 inch and 0.5 inch in front of the vertical. The vertical projections $a'\ b,'$ and $a,'\ c,'$ are both one inch long. Find the trace of the plane containing the triangle and find the true form of the triangle by rabatting it into the horizontal.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

MONDAY, APRIL 5TH :—MORNING, 9 TO 12.

Examiners, ... { C. H. McLEOD, MA.E. / H. F. ARMSTRONG.

1. In a given quadrilateral MLON, of which MO measures 1·5 in. ; the angles LMO, 30° ; MOL, 120° ; OMN, 60° ; and MON, 45°. ML, LO, are the vertical traces and MN, NO, the horizontal traces of two planes. A point P is so situated that a straight line joining its projections passes through M, and is one inch from both projection planes. Find the traces of the plane which contains P and is perpendicular to the two given planes.

2. Find the angles between the two given planes in the last question and the traces of the two planes which bisect the angles.

3. The length of a right hexagonal prism is 2 in. and the width of a face 0.75 in. Draw the plan of the prism when the ends are at 45° to the *H.P.* and one face is at 60° to the same plane (α). Find also the projection of the prism on a vertical plane which makes an angle of 45° with the horizontal edges of the ends.

4. The horizontal traces of two cylinders are circles of 1.25 in. and 0.9 in. diameter respectively. The centres of the traces are 1.75 in. distant from each other and are both 2·0 in. distant from the vertical. The horizontal and vertical projections of the generating lines of the larger cylinder make angles of 50° with the X Y line and the similar projections of the smaller cylinder make angles of 50° and 60° with XY. Find the horizontal projection of the line of penetration of the cylinders.

5. Find the shadow cast on both projection planes by a right cylinder when the projections of the rays make angles of 45° with XY. The axis of the cylinder is 2 in. long and is 2 in. distant from the V.P. The diameter of the base of the cylinder is 1·5 in.

6. Find the axometric projection of a right octagonal prism, the faces of which measure 3 in. by $\frac{3}{4}$ in. The axes of the projection make angles of 120° and 135°.

THIRD YEAR.

DESCRIPTIVE GEOMETRY.

THURSDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiners, ... C. H. McLEOD, MA.E. / J. G. G KERRY, MA.E.

1. State on what systems of map construction plates 6, 47 and 48 in the Atlas are constructed. Describe their construction briefly, and state their advantages and disadvantages.

2. The declination of the sun is 4° 50′ N., its altitude 44° 30′, and its hour angle 23° 20′. Determine graphically the azimuth of the sun and the latitude of the place.

3. The perspectives of two horizontal lines which are in the ground plane are shown in the sketch. The eye is 6″ distant from the picture plane. Determine the angle between the lines, the distance of their point of intersection from the horizontal projection of the eye and the horizontal angle between the principal plane and the line of sight to the point of intersection.

4. There are two blocks of stone 2 ft. square at their base and 8 ft. high, standing four ft. apart and surmounted by a block 8 ft. long and 2 ft. square. The eye is 6 ft. above the ground and 10 ft. away from the picture plane. Draw the perspective of the object when it is parallel to the picture plane, 3 ft. behind it and its nearest edge 3 ft. to the left of the principal plane.

5. With picture plane and eye as in question 4, draw the perspective of a pyramid with base 6 ft. sq. and an altitude of 5 ft. The sides of the base make angles of 30° to 60° with the picture plane, and the front corner is 1 ft. back of the picture plane and 4 ft. right from the principal plane.

6. Draw the horizontal shadow cast by the object in either 4 or 5 when the projections of the shadow rays make angles of 60° and 30° with the horizontal and vertical planes respectively, and the point of the object nearest to the vertical plane is 1 foot in front of it.

ELECTRICAL ENGINEERING.

THIRD YEAR.

MONDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiner,..... ....C. A. CARUS-WILSON, M.A., M.INST.E.E.

1. The plane of contact of the two rods in a magnetic traction apparatus is surrounded by a search coil connected to a ballistic galvanometer. When the rods are together a reversal of the magnetising current gives a deflection of 186°. The deflection on separation is 50°. What will be deflection when the same current is reversed after separation? Give the reason for your answer.

2. An iron ring 9 inches mean diameter, $\frac{3}{4}$ inch thick, has 400 turns wound upon it. What current will give 44,700 lines in the ring?

3. An iron ring 13 inches mean diameter, $\frac{5}{8}$ inch thick, has 715 turns wound upon it. Find the lines in the ring when the current in the winding is 6.4 amperes.

4. Same ring as question 3. Find the current required to give 29,000 lines when a gap of 0.12 cm. is cut in the ring.

5. Same ring as in question 3, with 0.12 cm. gap The ring is magnetised until the magnetising force required for the gap is equal to that required for the iron. Fifty search turns are wound round the ring and connected to a galvanometer which gives one degree of deflection when 1600 lines are reversed through one turn. Find the deflection if the gap is suddenly closed up, the magnetising current remaining unchanged.

6. A specimen of iron 42 cm. long and 1.27 cm. diameter is tested in a magnetic yoke which has 2,840 turns. The search coil, of 10 turns, is connected to the galvanometer described in question 5. Find the permeability of the specimen when 0.4 amperes reversed gives a deflection of 120°.

7. An iron ring 12 inches mean diameter, and 2 inches thick, is divided into two halves across a diameter. Each half is wound with 500 turns. Find the current required to hold the two halves together with a force of 972 pounds.

8. Same ring as in question 3, with 0.12 cm. gap. Find how many lines there will be in the ring when a current of 11.3 amperes is passing in the winding.

(The iron in all the questions except number 6 is supposed to be of the same quality, curves of B and H being supplied).

ELECTRICAL ENGINEERING.

FOURTH YEAR.

WEDNESDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,..... ..... C. A. CARUS-WILSON, M.A., M.INST. E.E.

1. A shunt wound generator of 125 volts and 75 amperes output has 3,260 turns on the field magnets the resistance of which is 40.3 ohms. Constand e.m.f. is obtained by a rheostat of 7.8 ohms resistance which is all in at no load and all out at full load. Find how many series turns would effect this regulation without the rheostat.

2. A four pole street railway motor has 624 conductors on the armature which is series connected and has a resistance of 1.2 ohms. Find the useful lines per pole required to run the motor at 800 r.p.m. with 1,200 inch pounds of torque on a 500 volt line.

3. A motor has to raise an elevator car weighing 1,500 pounds at 200 feet per minute. The frictional resistance is 430 inch pounds of torque on the motor shaft. Line volts 125. Gear ratio 75. Resistance 0.05 ohms. Diameter of rope drum 36 inches. Find the induction factor of the motor.

4. A ten pole railway generator has an armature of 78.8 inches mean diameter and 160 square inches section. Find the torque required to turn the armature against the magnetic resistance when the fields are fully excited, if the hysteresis loss is 8,600 ergs per cub. cm. per cycle.

5. Two dynamos have their shafts coupled and their armatures connected in parallel on a 250 volt circuit. One of them generates 800

amperes while 92 amperes is drawn from the line. The resistance of each armature is 0.0058 ohms. If the power used in magnetising the fields of the generator is 5.2 kilowatts, find its commercial efficiency.

6. A four pole motor has to be designed with an induction factor of 44. The armature is to be series connected, and the commutator to have 120 segments. The gap is 0.4 cm in width and has an area of 700 sq. cm under the poles, which have an angular breadth of 72°. Find the number of conductors on the armature so that when the motor is drawing 24 amperes from the line the induction under the pole tip due to the armature shall be half that due to the field magnets.

7. A 40 ton car is driven by two gearless motors at 20 miles an hour when in parallel on a 500 volt line, the frictional resistance being 495 inch pounds of torque per ton. Resistance per motor is 0.3 ohms. The wheel diameter is 33 inches. Maximum current per motor 200 amperes, and m constant throughout. If the acceleration is uniform up to full speed how many seconds will be spent in covering 200 yards from rest? Assume the parallel method of control.

8. A train weighing 600 tons is drawn by four gearless motors at 10 miles an hour up a grade of 0.7 per cent, the frictional resistance being 12 pound per ton. Line volts 500. Resistance per motor 0.03 ohms. The motors are connected in series throughout, and m is constant. Find the total current required to start up on the grade with an acceleration of 0.5 feet per second, per second.

9. A car weighing 35 tons has to start up from rest and travel 440 yards in 60 seconds. Gearless motors are to be used, of constant induction factor 178. The track is level, and the frictional resistance 300 inch pounds of torque per ton. Line volts 550. Parallel method of control. Find the diameter of the car wheel and the resistance of the motors.

ELECTRICAL ENGINEERING.

FOURTH YEAR.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,..... .....C. A. CARUS-WILSON, M.A., M.INST. E.E.

1. A wood arc light generator is being tested for distribution of potential round the armature, which has 80 sections. Forty observations are made with a double exploring brush at equal intervals round the commutator, between the neutral points, on one side of the armature. The sum of the forty readings is 411 volts, while the e.m.f. observed at the main brushes placed at the neutral points is 845 volts. The highest reading is 13.5 volts. What is the maximum volts generated by any one section?

2. Find the energy in foot pounds stored in the field magnets of a two pole generator when the total lines is 18×10^6 and the ampere turns 16×10.

3. A coil of 65 cm length and 1.8 cm mean diameter with 3400 turns has a secondary winding at the centre of its length of 270 turns. An alternating current of 2.3 amperes, frequency 120, is passed in the main coil. What will be the reading of a voltmeter connected to the secondary?

4. A coil having a self-induction of 0.27 henrys and a resistance of 0.09 ohms is connected to a constant e.m.f. The current is observed to ris to 16 amperes in 6 seconds. What is the e.m.f.?

5. Find the co-efficient of self-induction of two lines of wire, 0.409 inches diameter, 15 inches apart and half a mile long.

6. The shunt coil of a wattmeter is known to have a self-induction of 0.0317 henrys, its resistance being 400 ohms. When testing a transformer with power factor 0.7 the apparent watts is 42. Find the true watts if the frequency is 100.

7. A circuit consists of a line with self-induction of 0.0072 henrys and resistance of 2.4 ohms, connected to a load whose power factor is 0.8. Find the volts at the generator end required to give 100 measured volts at the load when the current is 20 amperes and the frequency 85.

8. An inductive coil of 5 ohms resistance draws 9 amperes when placed on a 100 volt alternating circuit, frequency 100. What will be the current if the frequency is halved, the e.m.f. remaining the same?

9. The self-induction for a line serving incandescent lamps is 0.00345 henrys, and its resistance 0.38 ohms. Find the drop in the line when the e.m.f. on the lamps is 100 volts, the current 20 amperes, and the frequency 90.

ELECTRICAL ENGINEERING.

FOURTH YEAR.

WEDNESDAY, APRIL 14TH:—MORNING, 9 TO 1.

Examiner,..... C. A. CARUS-WILSON, M.A., M.INST. E.E.

A car weighing 35 tons is equipped with two motors permanently connected in series. The tension on the line is 400 volts. The maximum current to be drawn is 150 amperes. The resistance of the motors is 0.387 ohms each. The car wheels are 27 inches diameter, no gearing used. The frictional torque is 5760 inch-pounds per motor and remains constant.

Given: The curve of Induction Factor, on an ampere base; scale, one inch equals 5 of m. and 10 amperes.

Construct: 1. A curve of total available torque on a speed base; scale, one inch equals 1,000 inch-pounds of torque, and 2 feet per second.

2. A curve of speed on a time base; scale, one inch equals 2 feet per second and 10 seconds.

3. A curve of distance travelled on a time base; scale, one inch equals 100 yards and 10 seconds.

The curves to be drawn in clearly in pencil; calculations to be handed in with the drawing.

B. A. Sc. EXAMINATIONS.

ELECTRICAL ENGINEERING.

MONDAY, APRIL 19TH :—MORNING, 9 TO 12.

Examiner,.....LOUIS A. HERDT, B.A.Sc., E.E.

1. Given two Compound Shunt Wound Direct Current Generators to be worked in parallel on the same bus-bars, give a complete sketch of the arrangement of conductors and how one machine would be thrown in parallel with the other supposed to be generating.

2. What are the three distinct conditions that affect the section to be given to conductors?

Give Thomson's rule for the sectioning of underground feeders.

3. A street 5000 feet in length has to be lighted by lamps placed every 500 feet. The lamps are placed in multiple, and the first lamp is 500 feet from the station. The lamps draw each 10 amps. at 100 volts; loss in line not to exceed 10 per cent. Ascertain the resistance per foot length of the conductor; the section of the conductor supposed constant through all its length.

4. Ascertain size of a trolley wire for a section of road 2 miles in length, single track. There is to be a six minute service, average speed of car eight miles per hour; average current per car, 15 amps., line volts, 500 with 10 per cent. drop allowed. The resistance of ground return need not be taken into account.

5. Give a brief description of Thomson's lighting arrester, and what principle underlies its working.

6. Assuming a fixed loss of energy in Conductors, show that the weight of copper in plants of the same H.P. capacity is inversely proportional to the square of their tensions utilized.

7. On 100 volt mains a Voltmeter of 16,000 ohms resistance has one terminal connected to earth and the other alternately to the positive and negative mains: the readings are respectively +60 and —5 volts. What is the fault resistance of the network?

What is the insulation resistance of each main?

8. Explain the principle of a Mordey alternator. A 75 K.W. Mordey alternator runs at a speed of 500 revolutions per minute; it has 12 poles and 24 armature coils. What is the frequency?

B.A.Sc. EXAMINATION.

MECHANICAL ENGINEERING.

LABORATORY WORK.

SATURDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners, ... J. T. NICOLSON, B.Sc.; R. J. DURLEY, B.Sc.; W. A. DUFF, B. A., Sc.

(Not more than six.)

1. On trial of a 10 H.P. Hot-air engine it was found that when the I.H.P. was 3.85, the B.H.P. was 1.17; that when the engine had no brake load the I.H.P. was 1.59; and that the power lost in friction increased proportionally to the indicated power.

Find the mechanical efficiency when the I.H.P. is 1, 2, 4, 8 and 10; and plot curves of I.H.P., B. H. P. and efficiency on a power base.

2. Make a diagrammatic sketch showing the pipe connections and apparatus required for the trial of a boiler feed pump of the duplex type. What measurements have to be made to determine:

(1) Steam per I.H.P. hour
(2) Steam per pump H.P. hour.
(3) Head of water against which pump works.
(4) Volumetric efficiency of pump.
(5) Quantity of water pumped per hour.

How would you best determine the piston speed in a non-rotative pump?

3. In a Separating steam-dryness tester (with two separating vessels), the amount of water drawn is 6 ozs. and 2 ozs. from the 1st and 2nd vessels respectively; the amount of steam condensed and weighed is 5 lbs. (all during the same interval of time). Calculate the dryness of the steam:

(1) Assuming both weigh-scales correct.
(2) Taking an error of $\frac{1}{2}$ oz. in excess in the small scale.
(3) With an error of $\frac{1}{4}$ lb. in defect in the large scale.

4. Show by dotted lines on a normal indicator diagram the effect of (1) a stretching ; (2) a slack cord to the barrel.

What precautions do you adopt to secure accuracy when using a Crosby indicator ?

5. What correction for its position would you allow on the reading of an otherwise calibrated steam gauge, when fitted as sketched ?

6. Explain how the expansion line is drawn on a theta-phi diagram ; having given the mean card, and your chart ; also the cylinder feed, clearance volume and piston displacement.

7. In a certain boiler trial the feed, having been first weighed, was pumped into the boiler by an injector, supplied with an unknown quantity of steam from another boiler. One per cent of the whole delivery of the injector escaped at the overflow. The feed temperature in the measuring tank was 60° F., and at the injector delivery 200° F.

The amount of feed weighed was 8 lbs. per lb. of coal. The pressure was 115 lbs. absolute (total heat 1185). Find the evaporation from and at 212°.

8. You are provided with a sheet of the data from the trial of a high speed engine with an ordinary slide valve. Recalculate the results on the assumption that there is a direct leak from the steam chest into the exhaust pipe of 300 lbs. an hour.

THIRD YEAR.

MACHINE DESIGN.

TUESDAY, APRIL 7TH :—MORNING, 9 TO 12.

Examiners, ... { J. T. NICOLSON, B.Sc. / W. ARCH. DUFF, B.A.Sc.

1. Define stress, strain, elastic limit, yield point, permanent set, ultimate strength, and factor of safety.

Draw stress-strain diagrams for bars of wrought iron and cast iron in tension and compression.

2. In which position is a square beam stronger : with the plane of bending parallel to a diagonal or parallel to one side ?

Prove your result.

3. Deduce a formula for the resistence of thin cylinders to an internal bursting pressure.

What thickness would you make the steel plates of a boiler 8 feet in diameter, working pressure 125 lbs.?

Efficiency of joint may be taken as 70%; tenacity of plates 50,000 lbs.; factor of safety 5.

4. Sketch and dimension a double rivetted, double butt strap joint with zig-zag rivetting, for the boiler of the last question, taking $ft = 10{,}000$ lbs., $fs = 8{,}000$ lbs., and ratio of double to single shear strength of rivets 1.5.

5. How many bolts would you use to fasten the cylinder cover of an engine working at 105 lbs boiler pressure?

Diameter of cylinder 14 inches; diameter of bolt circle 17 inches, $f = 4{,}000$ lbs.

6. Make a careful sketch of a foundation bolt and washer, secured by a cotter with gibbed ends.

Give suitable dimensions to withstand a pull on the bolt of 30,000 lbs. $ft. = 10{,}000$ lbs. $fs. = 8{,}000$ lbs. $fc. = 20{,}000$ lbs.

7. Describe concisely Beauchamp Tower's experiments on journal friction, and state the conclusions that may be drawn from them.

8. Find the diameter of the overhung crank pin of a steam engine having a cylinder 28″ in diameter, initial pressure 100 lbs. Take the bearing pressure at 800 lbs. per sq. in. of projected bearing area, and the safe tensile stress at 9,000 lbs.

9. The gun metal brake handle of an electric car has a radius of $9\frac{1}{2}$ inches; the vertical height of the handle above the bearing is 12 inches; the overhang of the handle is 5 inches. If a motorman can apply a maximum force of 200 lbs. on the handle, find the diameter at the dangerous section if the material have an allowable shearing stress of 3,500 lbs.

10. Sketch carefully Seller's double cone vise coupling.

11. In a freight car axle the distance between centres of the axle boxes is 6′ $4\frac{3}{4}$″. The rails are 4′ $10\frac{1}{2}$″ centres. Find the diameter of the axle at the wheels and in the centre if the load be 9,000 lbs. and the safe stress 9,000 lbs. per sq. in.

12. In a coupling for permanently uniting two $4\frac{1}{2}$″ diameter shaft ends, consisting of two cast-iron clips in halves, 10″ outside diameter

and 20″ long, with two wrought-iron shrunk rings pressing the clips against the shafts, each 1¼″ thick and 1″ wide; find the radial pressure which a tensile stress of 10,000 lbs. in the rings will produce between clips and shafts. If the shafting runs at 120 revolutions, find the horse-power at which the clips will begin to slip, the coefficient of friction being 0.25.

13. In the last question find the maximum horse-power the shaft itself can safely transmit, with an allowable shearing stress of 8,000 lbs.

14. Vertical cast iron pillars 20 feet high, 8″ outside diameter, and half an inch thick, spaced 110 feet apart, are used to support electric railway trolley wires.

These wires ⅜″ diameter are two in number of copper, whose weight per cubic inch is 0.32 lbs.

The poles are 40 feet centre to centre, and the wires are 8 feet centre to centre, across the street.

The sag of the supporting cross wire is 12 inches. Find the stress in the metal at the foot of the pole.

B.A.Sc. EXAMINATION

MACHINE DESIGN, I.

Wednesday, April 14th:—Morning, 9 to 12.

Examiner,..... R. J. Durley, B.Sc., A.M.Inst. C.E.

(Not more than six questions are to be attempted. Show all calculations for determining dimensions. Sketches should be freehand and in fair proportion.)

1. Sketch a longitudinal section through the ports and barrel of a steam cylinder fitted with a separate liner and separate valve face, the ports being arranged for a double ported slide-valve. Show clearly how the liner is secured steam-tight in the cylinder, and also how the valve face is fastened. The valve need not be shown.

2. A leather belt ¼″ thick transmits 8 H.P. from a pulley 12″ dia. on a shaft making 640 revolutions per minute. Find the width if the belt embraces half the circumference of the pulley, and the safe working load on the leather is 320 lbs. per sq. inch of section. (Take coeff. of friction=0.3, $e = 2.718$, and weight of 1 cubic inch of leather = .0358 lb.)

3. A girder stay for a firebox top carries two bolts, it is of rectangular section, and the maximum stress in the material is 9,000 lbs. per sq. inch. Show that

$$p = 750 \frac{d^2\ T}{(W-P)\ DL}$$

where W = width of firebox in inches.
P = pitch of supporting bolts in inches.
D = distance apart of centres of girders in inches.
L = length of girders in feet.
d = depth of girder in inches.
T = thickness of girder in inches.
p = working pressure in lbs. per sq. inch.

4. A drag-link coupling is to connect two shafts whose axes are parallel and $\frac{1}{4}''$ out of line. Sketch the coupling and determine its leading dimensions if 100 H.P. is to be transmitted at 50 revolutions per minute. Allow a stress of 9,000 lbs. per sq. inch in torsion.

5. Sketch two forms of metallic packing for steam engine pistons, stating for what type and size of engine they are suitable. How can leakage be prevented where the rings are split, and how are the junk ring (or follower) nuts or screws secured?

6. In a jack the load of 20,000 lbs. is lifted directly by a screw having a square double thread. The screw does not rotate, and is raised by turning a nut formed into a worm wheel of 16 teeth, geared with a single thread worm having a handle 12 inches radius. A force of 70 lbs. is applied at the end of this handle, and the efficiency of the jack is 0.3. Find the pitch of the vertical screw, its diameter outside and at bottom of thread, and the diam. of the collar taking the downward thrust of the nut. Take stress in screw = 6,000 lbs. per sq. inch in compression, and intensity of pressure on collar of nut = 3,000 lbs. per sq. inch.

7. Sketch the crank pin end of a connecting rod of the marine type, and mark on it dimensions calculated from the following data:

Dia. of cylinder 24", initial steam pressure 100 lbs. per sq. in., dia. of crank pin $5\frac{1}{2}''$ length of crank pin 7".

8. Find the max. stress in a connecting rod, due to bending caused by inertia, in the following case.

Stroke 18"; Revolutions, 380 per minute; connecting rod centres 3'—3"

Dia. of rod $3\frac{1}{2}''$ (supposed uniform).

Weight of material of rod 0.3 lb. per cubic inch.

9. Investigate an expression for the cross section of a long suspended rod of uniform strength.

A deep mine pump has a bucket 20" dia., and pumps against a head of 100 feet of water. Neglecting the weight of the pump bucket, find the diameter at top and bottom of the pump rod, if 300 ft. long and of uniform strength, allowing a stress of 1,000 lbs. per square inch. The rod is of wrought iron weighing 0.28 lb. per cubic inch. Take $e = 2.718$.

10. Cylindrical boilers have been suggested with their seams placed diagonally instead of longitudinally and transversely. With the same plate thickness and efficiency of joint in each case which will be the stronger boiler, and why? Find the difference in strength.

B.A. Sc. EXAMINATION.

MACHINE DESIGN II.

TUESDAY, APRIL 20TH :—9 TO 2.

Examiner,.....R. J. DURLEY, B.Sc., A. M. INST., C.E.

Instructions.—The necessary calculations are to be made in ink on the foolscap paper provided, and must be sent in with the drawings, which are to be in pencil, and dimensioned as far as time will allow. Mathematical tables, slide rules, notebooks, and books of reference may be used. Ten per cent. marks will be given for neatness and accuracy of drawing.

Design one segment of the rim of a rope driving flywheel for a mill engine from the following data :—

Speed of rope 4,500 ft. per minute.
Power transmitted 1,080 H.P.
Revolutions 70 per minute.
Number of segments 12.
Rope cotton.
Tension on tight side 290 lbs. on one rope.
" " slack " 70 " " " "
Total fluctuation of speed 1-100 of mean.
" " " energy 0.19 of work done per revolution.

Each segment is connected to the next by 8 bolts. Each arm is connected to rim by 4 bolts. Rim and arms are cast iron. Allow 8,000 lbs. per square inch on steel bolts in tension, and 3,000 lbs. per square inch in shear. The weight of arms and boss of wheel can be taken as 42,000 lbs.

A half section across rim, and details showing clearly the connection of the segments to one another and to the arms, are to be drawn to a scale of 3 inches = 1 foot.

B.A. Sc. EXAMINATION AND THIRD YEAR.

THERMO-DYNAMICS.

SATURDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner,.....J. T. NICOLSON, B.Sc.

(Fourth year not more than ten in all.)
(Third year not more than eight of the first ten.)

1. A building uses ten million lbs. of steam per annum for heating purposes which condenses from 19 lbs. pressure abs., and drains back to the boilers at 200° F. If each lb. of coal burnt on the grates gives 8000 T. U. to the water, what amount of coal will be burnt per annum?

If the feed from the city mains is at an average temperature of 45° F., what amount of coal would be wasted by taking the feed from them and allowing the above hot feed to go to waste?

2. A feed pump uses 210 lbs. of steam at 115 lbs. pressure absolute per I. H. P. hour. If each pound of coal burnt to make steam for the pump gives only 8000 T.U. to the water, and the boiler feed is at 200° F., what amount of coal is burnt per I.H.P. hour of the feed pump?

3. If in the last question the indicated work of the feed pump is three times the work actually necessary to pump the feed water into the boiler, what amount of coal will be burnt in pumping 10 million pounds of feed against a pressure of 100 lbs. by the gauge; the volume of 1 lb. of feed is 0.017 cu. ft.

STEAM TABLE.

.	t.	h.	H.	L	V.
115	337.8	308.7	1185	876	3.862
19	225.2	194.1	1150.7	956.6	20.90
14.7	212	180.8	1146.6	965.8	26.60
11.52	200	168.7	1142.9	974.2	33.40
0.1471	45	13.1	1095.7	1082.6	2087

4. Sketch and describe Newcomen's Atmospheric engine.

5. The density of superheated steam is 0.0502 lb. per cubic foot at 32°F and atmospheric pressure. Determine the value of c in the expression $PV = cT$ for superheated steam taken as a perfect gas.

6. A Whitehead torpedo contains 4 cubic feet of air, at 60°F, compressed to a pressure of 1200 lbs. abs. per sq. in. What amount of work can this give out if it expands adiabatically down to atmospheric pressure.

7. What is denoted by the letter gamma in Thermodynamics? Prove that it is the index of adiabatic expansion for a perfect gas.

8. What do you understand by reversibility in a heat engine?

9. Define total heat, latent heat, and total internal work, as referring to steam.

10. In a perfect steam engine calculate the work done during admission, expansion, exhaust, on the feed pump; and the efficiency.

11. Summarize the sources of loss in the actual steam engine.

12. Explain the principle of Lord Kelvin's warming machine.

13. The volume of one pound of dry steam at 230 lbs. pressure absolute is two cubic feet. Find the volume of one pound of steam whose dryness is 0.8 at same pressure:
(*a*) approximately, (*b*) exactly.

14. Draw compound diagrams for a compound engine of (*a*) the Woolf type, (*b*) the receiver type.

15. Sketch any form of steam boiler you are familiar with.

(*Mechanical Engineering and Honours Students not less than three.*)

1. Find the theoretical maximum pressure of explosion in a gas engine if the initial temperature be 120° F, the specific heat of the explosive mixture 0.18, and the ratio of air to gas in the mixture 10 to 1 by volume the density of gas is 0.44 that of air.
Find the efficiency assuming the Otto cycle and the ratios of expansion and compression be 3.

2. Define entropy. Find the increase of entropy of 1 lb. of water heated from absolute temperature 520° to 760° F.
Prove that an adiabatic line is vertical on the theta phi diagram.

3. Find the numerical value of the rate at which pressure increases with temperature on the curve of pressures and temperatures for saturated steam, when the pressure is 115 abs.

4. Find the "Willans efficiency" of a non-condensing engine using 24 lbs. per I.H.P. hr. of steam at 115 lbs. absolute pressure per sq. in

THIRD YEAR.

DYNAMICS OF MACHINERY.

WEDNESDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiner,..... ..... JOHN T. NICOLSON, B.Sc.

(Not more than 10.)

1. It is proposed to construct a cylindrical ship 750 feet long, 150 feet dia., which is to *roll* across the Atlantic at a speed of at least 30 miles an hour. If the wind pressure at this speed be taken at 20 lbs. per square foot of area of the vessel (projected on a diametral vertical plane), what horse power must the propelling engines develop? Assume an immersion of 20 feet.

If the engines require 2 lbs. of coal per I.H.P. hour, and there is stowage room for 8,000 tons, how far across would the coal supply last?

2. Find expressions for the forces tangential and normal to the crank pin path in the direct acting engine, when inertia and friction effects are neglected.

3. Show how to draw a diagram of resultant force on the main bearings of an engine due to connecting rod force, fly-wheel weight and belt pull combined.

4. Deduce an expression for the weight of a fly-wheel, for an engine in terms of the energy expended per stroke and the excess of this above the mean, the fluctuation of speed to be allowed, the speed itself and the wheel radius.

5. Describe concisely the different methods which are in use for preventing excessive fluctuations of speed in pumping engines which cut off steam early in the stroke.

6. State and prove Mohr's construction for finding the piston acceleration in a direct-acting engine; *or* find an analytical expression for the same.

7. Summarize the results of Galton's experiments on railway brakes.

8. Deduce the expression

$$P = Q \frac{p + \mu \pi d}{\pi d - \mu p}$$

for the modulus of a square threaded screw.

9. The spindle of a thickness planer runs at 3,600 revs. per min.; it has a 2″ belt $\frac{1}{4}$″ thick on a 3″ pulley (weight of belting is 0.036 lbs. per cub. inch). Find the stress due to centrifugal force.

10. Evaluate the maximum normal pressure per sq. inch by an ordinary belt against its pulley, in terms of the belt tension and pulley diameter.

11. Draw a diagram of the forces acting on a railway carriage wheel: (1) when running under a pressure from the brake block without any skidding, (2) when completely skidded.

12. Under what circumstances is it advantageous to substitute friction wheels for a bearing to support a journal?

13. Find an expression for the resultant force on a pulley of a block which is being hauled on; taking into account the friction of the spindle.

B.A.Sc. EXAMINATION.

MECHANICAL ENGINEERING.

WEDNESDAY, APRIL 7TH :—MORNING, 9 TO 1.

Examiners,..... { J. T. NICOLSON, B.Sc. R. J. DURLEY, B.Sc.

(*You may attempt all the questions*)

1. Draw a Zeuner diagram for a Meyer expansion valve (a plate on the back of the main valve) in the following case: Travel of main valve 4″; of expansion valve 3″; angles of advance, main eccentric 30°, expansion eccentric 90°; lead $\frac{1}{4}$″. The expansion valve is to cut off when the crank has turned through 30° from the dead centre. Prove your construction, find the lap of the main valve, the crank angle at main valve cut off, and the distance between edges of main and expansion valves when both are at mid travel.

2. Find the stroke and cylinder diameters of a set of four crank triple expansion marine engines of 3000 I. H. P. at 385 revs. per min.; the piston speed being 1200 ft. per min. There are to be two low pressure cylinders of equal size, the total ratio of expansion is to be 7; the cut off in the H. P. cylinder 0.8. The mean effective pressure referred to the L. P. piston is to be 50 lbs.

3. Determine the sizes of a single-acting air pump and a double acting circulating pump (driven by levers from the L. P. crosshead) of a set of vertical marine engines, having cylinders 22″, 35″, and 57″ by 42″ stroke. The mean bucket speed is to be 330 feet per minute; and the temperatures may be taken as follows:

Exhaust steam 180° F.
Hotwell 105° F.

Circulating water inlet 60° F.
" " outlet 100° F.

The engines use 20 lbs. of steam per I. H. P. hour and develop 1400 I. H. P. at 85 revolutions per minute.

4. Make a careful skeleton diagram of either a Gooch's link-motion or a Joy's valve-gear.

5. Show by careful hand sketches what effects would be produced on the normal indicator diagram from a steam engine with a common slide-valve under the following circumstances:

(1) The ports are too small.
(2) Too much outside lap.
(3) Too much inside lap.
(4) The angular advance too small.
(5) A very leaky piston.

6. Discuss the indicator cards given from the circulating and air pumps of a condensing steam engine.

7. What would you estimate as the speed of the water through the bucket valves in the diagrams shown? Take lift of valve = $\frac{1}{4}$ diameter.

8. How would you compare the values of two machinery oils?

SECOND YEAR.

KINEMATICS OF MACHINES.

SATURDAY, APRIL 10TH:—9 TO 12.

Examiner,..... .....R. J. DURLEY, B.Sc, A.M. INST. C.E.

(*Not more than twelve questions may be attempted*).

1. Define:—Mechanism, Link, Higher Pair, Lower Pair. What is meant by:—Constraint of an element, Reduction of a mechanism, Closure of a pair. What is a compound chain?

2. Prove that if three bodies have spheric motion, their three virtual axes at any instant lie in one plane.

3. Having given a curve of velocity on a distance base, explain how to find the corresponding curve of acceleration, and how to determine its scale. Prove the construction you employ.

4. Sketch the double-slider crank chain, and show the positions of its six virtual centres, explaining how they are determined.

5. In an oscillating engine, show how to draw a radial diagram of the angular velocity of the cylinder. Prove your construction.

6. Describe the Peaucellier straight line motion, and prove that its tracing point describes a straight line.

7. Sketch and describe the action of the anchor escapement. What are its disadvantages?

8. An equilateral curve-triangle, rotating about one corner with uniform angular velocity, works in a rectangular slot in a reciprocating piece. Draw a curve of linear velocity for the reciprocating piece for a complete revolution of the triangle.

9. The leading screw of a lathe has 2 threads per inch. The change wheels are from 20 to 150 teeth, rising by 5. Find the numbers and sketch the arrangement of the wheels necessary for cutting (*a*) a $\frac{1}{4}''$ thread of 20 per inch, (*b*) a 2″ left hand thread of $4\frac{1}{2}$ per inch; the leading screw being right-handed in each case.

10. A pinion is formed of eight cylindrical pins of small diameter projecting from the flat surface of a disc. What is the proper form for the teeth of a wheel gearing with this pinion with uniform velocity ratio; prove your result.

11. The centre lines of a pair of shafts intersect at 60°. They are to be connected with a velocity ratio of 0.36. Find by construction the pitch surfaces of a pair of bevel wheels which would give this velocity ratio.

12. Sketch Root's Blower. Explain its action, and state to what class of mechanisms it belongs kinematically.

13. What is a "click-train?" Illustrate your answer by sketching a lever lock.

14. An annular wheel having 120 teeth is bolted to the base of a cap stan barrel. It is driven by a spur wheel of 110 teeth, fixed rigidly to the connecting rod of the hydraulic engine working the capstan, and is so arranged that the spur wheel is always in gear with the annular wheel. Find how many revolutions the capstan barrel makes for each revolution of the engine.

SECOND YEAR.

DRAWING.

THURSDAY, 16TH APRIL:—MORNING, 9 TO 1.

Examiner,.....W. A. DUFF, B.A.Sc.

Finish No. 1 and either No. 2 or No. 3 in pencil before inking any in.

Complete and correct the views, giving all necessary dimensions.

Scale to be 3″ = 1′ 0″.

THIRD YEAR.

MECHANICAL DRAWING.

THURSDAY, APRIL 15TH:—MORNING, 9 TO 1.

Examiners, ... { J. T. NICOLSON, B.Sc. / W. A. DUFF, B.A.Sc.

Make full size drawing of the straight-way valve shown in accompanying sketch.

Ink in your drawing and colour all parts in section.

FOURTH YEAR (CIVIL).

STRUCTURAL DESIGNING.

Examiners, ... { HENRY T. BOVEY, M.I.C.E. / CECIL B. SMITH, M.A.E.

Designs, Strain Diagrams, Details, Bills of Material and Calculations for:

1. 100 foot Through Wooden Howe Truss.
2. 78 foot Through Plate Girder.
3. 76 foot Combination Fink Roof Truss.
4. 155 foot Through Steel Pin-connected Pratt Truss.

FOURTH YEAR.

METALLURGY.

SATURDAY, APRIL 24TH.

1. Name the metallurgical fuels, and state their relative importance in Canada. Describe the manufacture of coke and producer gas.

2. Compare the use of coal and producer gas in reverberatory furnaces, describing briefly the type of furnace best adapted to each. Calculate the approximate calorific power of each of the above fuels and the approximate calorific intensity of each combustion, and comment on the results obtained.

3. Describe concisely the manufacture of pig iron, including apparatus and plant.

Name constituents of charge. Explain reactions and name products.

4. Describe the modern American method of making lead (from ore), and briefly describe apparatus used.

Name constituents of charge. Explain reactions and name and describe products.

Why is it necessary to carefully calculate charge, and what is the method in general way of doing this?

5. Explain briefly the features of copper smelting. Simple mention will suffice for those similar to any already given under head (4).

What are the approved methods of separating gold and silver from lead or copper if the ores of (4) or (5) contain these precious metals?

6. Describe completely but briefly the plant and method you would use for treating a free milling gold ore.

If this ore had also some gold and silver bearing mineral not free milling, how would you try to save it?

Describe briefly some approved method for recovering the precious metals contained in this mineral (not a smelting method).

NOTE.—Use free-hand sketches as freely as possible in answering the questions, and write as concisely as you can while making your meaning clear.

THIRD YEAR.

MINING.

SATURDAY, APRIL 17TH.

1. Describe the course you would pursue if prospecting for gold and silver bearing minerals in rough, unsettled country.

2. Define "Outcrop," "Strike," "Dip," "Gossan," "Gold Gravel."

3. Describe briefly the methods of drilling in rock, and the tools used, and compare hand drilling with machine work.

4. Define "Blasting," "High Explosive," "Detonation," "Fuse," "Tamping."

5. Describe and sketch method you would use for timbering a drift or tunnel in heavy ground.

6. Compare the different means of transmitting power used underground.

7. What kinds of rope are used in mine hoisting, and what are the advantages and disadvantages possessed by each.

8. Describe the several methods which might be properly used for working a coal bed 6 to 8 feet thick and approximately horizontal if the bed were several hundred feet below the surface of comparatively level country, and the block to be mined contained 1,000 acres.

9. An old river bed gravel has been eroded and lost throughout most of its extent, but a portion 100 feet in average thickness and 200 acres in extent remains. Five miles (ditch length) away there is ample water supply in a small stream at a height of 800 feet above the gravel.

(*a*) How should you determine the value of the deposit.

(*b*) " " " work it if rich enough to justify treatment.

(*c*) About how rich should such a deposit be to be profitable.

10. A river runs due south along the eastern edge of a plateau about 1,000 feet high.

The first 300 feet of strata are of shale. The slope at surface is 1 in 10.

The next higher stratum is of massive limestone 100 ft. thick. Slope surface 1 in 3.

These both outcrop well and strike N. and S., dipping west 10° from horizontal, and are overlain by a basaltic cap reaching to the surface of the plateau.

At an elevation of 800 ft. above river and 5,000 feet west of it a brook exposes a 2 ft. fissure vein striking N. 10° West and dipping E. 80° from horizon and carrying Galena, Sphalerite, Haematite, Pyrite and Chalcopyrite and a fair amount of Au and Ag. Describe in detail the probable nature of the ore deposits and the proper method of testing, opening and working the property.

RAILWAY ENGINEERING.

THIRD YEAR.

CIVIL AND MINING.

MONDAY, APRIL 19TH :—MORNING, 9 TO 12.30.

Examiner, ... CECIL B. SMITH, M.C.Soc.C.E.

1. Explain what are the fixed charges on the earnings of a Railway Company?

What per cent. do the working expenses on Canadian Railways bear to their gross earnings?

2. In the study of proposed Railway, as an investment, state what three general items determine the result? In what way does the condition of the money market affect the enterprise?

3. In a country of light traffic, but good prospects of development, what would be the class of road you would build? Give your reasons for each qualifying statement. In a thickly settled country of heavy traffic, already served by a railway, what class of road would you build? Why?

4. What are the principal items of operating expenses, and what are their average proportions for Canada?

5. What is the law of increase of traffic? Deduce it. How much per head can we expect now for Canada? Would this be the same for a city, town, village or country station? If not, why?

6. Enumerate train resistances and their average values.

What would the total train resistance in lbs. per ton be for a train of 400 tons running at 20 miles per hour around a 10° curve up a $\frac{8}{10}\%$ grade?

7. Explain what is "velocity head" on grades, and give the formula. State the limitations of its use, and its special advantages in modifying grades.

8. Taking grade of repose at $\frac{5}{10}\%$ and maximum train length of 1000 feet, how long a vertical curve would you use to connect a level grade with an $\frac{8}{10}\%$ ascending grade? and how far would it be above the apex point of grades?

9. Regards cost of hauling, what classes would you divide grades into? Supposing maximum 1.0% grades are to be changed into $\frac{8}{10}\%$ grades over a 100 mile Engine Division, the train load in one case is 333 tons net, in the other 444 tons net. What saving in operating expenses, per year, will be effected in handling 10,000 tons of freight per day each way?

10. In a cubical parabola, as an easement curve, deduce the following from 1st principles:—

(a) $\frac{1}{2}$ length of transition $= n = 186 \sqrt{\frac{O}{D}}$

(b) Angles of Deflection at $P.\ T.\ C. = \frac{1}{3}$ total deflection for same length.

(c) Foundation series for a transition of 20 feet for each degree, up to a 12° curve.

What are the three general cases of application of transitions to the ends of circular curves, and when are they most likely to be used?

11. Describe the general methods of procedure in making (a) trial line surveys, (b) location surveys, giving composition and duties of party, in detail, instruments used, notes taken and methods of doing work, etc.

RAILWAY ENGINEERING.

FOURTH YEAR, CIVIL AND MINING.

PAPER I., SUBSTRUCTURES.

MONDAY, APRIL 19TH :—MORNING, 9 TO 12:30.

Examiner,..... .... CECIL B. SMITH, M.C.Soc.C.E.

1. Write a short statement of the various considerations necessary in determining the square feet of cross section of any water-way passing beneath or through a railway embankment.

2. An embankment 6 feet high to sub-grade has a stream of (*a*) 3 feet maximum cross section, (*b*) 20 feet maximum cross section, passing across it; design, in full, the necessary structures.

3. Design a stone box-culvert 4 ft. high, 3 ft. wide, inside of barrel, with an extreme length of 45 feet on a grade of 5 feet in its length.

Showing plan, side elevation and cross section, giving those kinds of paving, and wing walls which you consider best.

4. Sketch various forms of wing walls of arch culverts, stating their respective advantages and disadvantages.

5. What are the various forms of abutments and where specially used? with weak points, of each, clearly defined.

6. What are different methods of founding (*a*) on dry land, (*b* in water.

7. A pile foundation to carry 1,000 tons is to be driven with a drop hammer of 25 feet fall, weighing 2,000 lbs. with a penetration at last blow of $1\frac{1}{2}$ inches; how many piles would you use?

8. Explain, with sketches, the principle of sinking a deep foundation by compressed air. Show all working parts, and describe their methods of use.

9. Sketch various forms of founding trestles on green embankments. Comment on these forms.

10. What are usual methods of elevating the deck of a trestle on a curve? Which are best?

11. Design the floor system of a wide deck trestle, to carry heavy standard guage engines.

12. What are the usual methods of calculating cross section areas and volumes of prismoids?

RAILWAY ENGINEERING.

FOURTH YEAR.

CIVIL AND MINING.

PAPER II, TRACK AND EQUIPMENT.

MONDAY, APRIL 19TH :—2 TO 5 P.M.

Examiner,.....CECIL B. SMITH, M.C.Soc.C.E.

1. What are the objects of using ballast? What kinds of ballast are in common use? Rank them in order of merit.

Sketch a typical 1st class roadbed cross section with (*a*) gravel ballast, (*b*) rock ballast, each being both in cutting and embankment.

2. What are chief objections to wooden ties when used with Vignoles rails? How can some of these disadvantages be avoided or guarded against?

3. Sketch a Post metal tie and fastenings.

4. Draw to scale a cross section of a steel rail of say 75 lbs. per yard (take the rail 5 inches high).

5. Draw up specification for steel rails giving chemical and mechanical tests.

6. Calculate the lead. and length of split switch rails for a No. 8 frog.

7. Sketch a spring frog; show the principles involved in its safe use.

8. Sketch a Wharton switch, describing method of use. Where is such a switch usually used?

9. What various ways are in common use for line block signalling of trains? Describe that method, in detail, which is in most common use in (*a*) America, (*b*) England.

10. Describe with sketches the principles involved in the use of the Westinghouse Air Brakes.

MUNICIPAL ENGINEERING.

(ROADS AND PAVEMENTS.

FOURTH YEAR CIVIL.

TUESDAY, APRIL 20TH :—9 A.M. TO 1 P.M.

Examiner,.....CECIL B. SMITH, M.A.E.

Write extended essays on

1. Traction, tractive power, etc., on roads and pavements.

2. Considerations on the location of a road.

3. Construction and maintenance of earth roads.

4. Construction and maintenance of macadam and Telford roads.

5. Construction and maintenance of stone block pavements.

6. Construction and maintenance of asphalt pavements.

7. Construction and maintenance of vitrified brick pavements.

8. Construction and maintenance of wooden pavements.

[In Nos. 3, 4, 5, 6, 7, 8, point out the conditions under which each would be applicable, their comparative costs, wearing qualities, and compare them from every point of view from which a comparison can be made as affecting the health, comfort and finances of the various communities using them.]

THIRD YEAR CIVIL AND MINING.

MUNICIPAL ENGINEERING.

(WATER SUPPLY.)

THURSDAY, APRIL 15TH :—2 to 5 p.m.

Examiner, ... R. S. LEA, M.A.E.

1. Describe briefly the different systems of water-supply, and state the points of importance which govern the selection of the source in each case.

2. Explain a method of obtaining the amount and direction of flow of the ground water as a means of determining the quantity available for a water supply.

3. Outline the nature of the examinations and analyses which should be made in order to ascertain the quality of a sample of water for domestic use.

What is the significance of a high percentage of (*a*) chlorine, (*b*) nitrites, (*c*) albuminoid ammonia?

What special precautions are necessary in the storage of underground water, and why?

4. Upon what factors does the supplying capacity of a water-shed depend?

5. Make a sketch, with dimensions, of a cross-section of an earthen dam given :—

(1) Depth of water at dam, 50 feet.

(2) Rock 15 feet below the surface of the ground.

(3) Area of water-shed, 7 square miles (question 6).

(4) Length of artificial pond, 1 mile.

Write a short description of the materials used and the method of construction of the different parts.

6. What should be the dimensions of the waste weir in order to provide for a rainfall of 6 inches over the whole water-shed, collected in 24 hours and flowing continuously for that period?

7. Specify the requirements for a good fire stream.

What would you consider a good fire stream for (*a*) the business portion of Montreal, (*b*) the residential portion, (*c*) a country town of 5,000 inhabitants?

THIRD YEAR.

CEMENT TESTING LABORATORY.

TUESDAY, MARCH 30TH:—9 TO 12 A.M.

Examiner,.....CECIL B SMITH, MA.E.

(A) ORAL EXAMINATION.

What is the specific gravity test? Why made? How made? What is the blowing or constancy of volume test made for? What different ways are in use for its determination? Describe other tests that are made on cements, illustrating by apparatus used. Why are sand tests more valuable than neat tests, and why are uniform results more difficult to obtain in the former?

(B) WRITTEN EXAMINATION.

1. Make a report on the cement you tested on 12th of March, giving your views of its different qualities.

2. Draw up a general specification for a good Portland cement.

3. Describe the process of manufacture of Natural and Portland cements.

4. Comment on the presence of Magnesia and Sulphuric Acid in Portland cement.

5. Why are magnesian natural cements quite safe to use?

6. Comment on over-limed and over-clayed cements,—give Le Chatelier's chemical limits of a good Portland.

7. What various combinations are formed in burning a Portland cement? Give average percentages of Silica, Alumina, Lime, Iron Oxide, Magnesia, Sul-acid, Alkalies.

8. How are mortars and concretes mixed, and how placed, (*a*) in air, (*b*) under water?

Why cannot concrete sidewalks be laid without joints?

M.E. EXAMINATION.

HYDROMECHANICS AND HYDRAULICS.

Examiner,.....H. T. Bovey, LL D., M.Inst.C.E.

1. A cylindrical vessel is 10 feet high, and its base, which is horizontal, has a radius of 1 foot; it is filled with water, and a small hole is made in the bottom. Compare the rate of descent of the surface when the hole is first opened with the rate when the vessel is half empty. If the vessel is half emptied in 20 minutes, what is the effective area of the hole?

2. A vertical cylinder contains equal volumes of two liquids, the density of the lower liquid being three times that of the upper liquid. Find the whole pressure on the curved surface, and prove that, if the fluids be mixed together so as to become homogeneous, the whole pressure will be increased in the ratio of 4 to 3.

3. State Dupin's Theorems, and remark on the surface of buoyancy.

4. A solid is floating in a liquid, show how the stability of the equilibrium depends upon the position of the metacentre; and in the case of homogeneous liquid obtain a formula for the height of a metacentre above the centre of gravity of the liquid displaced.

An ellipsoid of axes 4, 6, 10 feet respectively is half immersed in homogeneous liquid of density one-fourth its own average density, its lower vertex resting on a horizontal plane; if the centre of gravity be two feet above this vertex, prove that the equilibrium is stable for small displacements.

5. A ship is floating at a draft of 18 feet forward, and 20 feet aft, when the following weights are placed on board in the positions named:—

Wt. in tons.	Distance from C. G. of water plane in feet.	
10	90	before;
30	30	"
70	30	abaft.
30	45	"

What will be the new draft forward and aft, the "moment to change trim one inch" being 700 foot-tons, the "tons per inch" being 30?

6. The top of a rectangular box is closed by a uniform elastic band, fastened at two opposite sides and fitting closely to the other sides; the air being gradually removed from the box, find the successive forms assumed by the elastic band, and when it just touches the bottom of the box, find the difference between the external and internal atmospheric pressure.

7. An open cylinder, of radius 2 and axis vertical, contains fluid to a

depth 4; if the whole be made to revolve as if solid with uniform angular velocity, find the form of the free surface. Show that the average pressure on the curved surface is trebled when the angular velocity is $8\sqrt{2}$. Further, if the cylinder be closed by a fixed lid that just touches the fluid at rest, then the angular velocity that just trebles the average pressure is but 8. If a hole be made in the curved surface of the cylinder at the bottom, find when the increase of velocity is 8. In what time one-half of the fluid will have escaped.

8. A diving bell is in the form of a surface of revolution such that as the top of the bell is lowered uniformly, the surface of the water within rises uniformly up the axis; prove that the meridian curve is a rectangular hyperbola.

9. Show how to deduce Bernouilli's Theorem from the general equations.

10. The total head of water over a turbine is 250 feet, and the delivery is through a 4 inch pipe 200 feet in length. Find the velocity of the water in the pipe so that the efficiency of the turbine may be a maximum. Assuming the efficiency to be 90 per cent., determine the power.

11. In a stream of rectangular section and of a width very great as compared with the depth, deduce the following relation

$$\frac{dh}{ds}\left(1-a\frac{w^2}{gh}\right) = i\left\{1-\left(\frac{H}{h}\right)^n\right\}$$

and discuss the case, $w^2 < gh$ and $H > h$.

MA.E. EXAMINATION.

HYDRAULICS.

Examiner,.....H. T. Bovey, LL.D., M.Inst.C.E.

1. A pressure engine works steadily under a pressure P, the velocity of steady motion being V_0. Show that,

$$v_0^2 = \frac{2g}{WK}(p_0 - P)$$

p_0 being the unit pressure at the accumulator ram.

A direct acting lift work under a constant head of 100-feet, of which $12\frac{1}{2}$ per cent. is required by frictional resistances. The speed of steady motion when raising 1500 lbs. is 2 feet per second, and the 4 inch supply pipe is 200 feet in length. Find the diameter of the ram. What would be the speed of steady motion if the load were only 750 lbs.?

2. Describe in full, a test of a 16 H.P. Pelton wheel, giving sketches of the accessory apparatus you may require, and shewing how to tabulate the observations and results.

3. Show how to determine the mechanical effect of a breast-wheel.

4. An I.F. turbine passes 160 cubic feet of water per minute, and the slope of the guide vanes is 1 in 6. The outer and inner diameters are 3 feet and 15 feet respectively, and the breadth of the orifices is 1 foot. Find the efficiency.

5. An O.F. impulse turbine passes 100 cubic feet of water per second under an effective head of 10 feet. The depth of the wheel is 1 foot, and the mean radius is 3 feet. Also $\beta = 30°$, $V_2'' = 0$, and it may be assumed that the whole of the effective head is transformed into useful work. Determine (a) α, (b) β, (c) the efficiency, (d) the inlet and outlet orifice areas.

Shew how the efficiency is modified when hydraulic resistances are taken into account.

6. Show that (a) in a free circular vertex $v.r$ = a constant, and (b) that the increase of pressure-head at any radius r_o in a free spiral vertex is $\frac{v_o^2}{2g}\left(1-\frac{r_o^2}{r^2}\right)$, v_o being the velocity at radius r_o.

How does the latter result affect the efficiency of a centrifugal pump?

7. In a C.P. $v'_w = 0$, show that the turning moment

$$= \frac{wQ}{g} v_r'' r_2$$

8. In a C.P., $\beta = 15°$, $H_a = 30$ feet; $Q = 30$ cubic feet per second; No. of revolutions per minute $= 150$; $r_2 = 3r_1$; $v'_r = 7\frac{1}{2}$ feet per second; $v_r'' = 5$ feet per second. Determine α, r_1, r_2; the efficiency and the loss of head in hydraulic friction.

Find the efficiency when a vortex chamber of radius $4r_1$ is added.

Faculty of Law.

FACULTY OF LAW.

COMMERCIAL LAW—BILLS OF EXCHANGE; PROMISSORY NOTES.

SATURDAY, DECEMBER 19TH.

Examiner,...PROF. DAVIDSON, Q.C., M.A., D.C.L., Acting Dean.

1. Give the definition of a Bill of Exchange and of Promissory Note respectively; and explain in what respects they resemble each other.

2. Distinguish between an Inland and a Foreign Bill; an Inland and a Foreign Note.

3. Explain the following terms as applied to Bills: Drawer, Drawee, Payee, Indorser, Acceptor, Acceptor Supra Protest, Referee in case of need, Delivery, Transferer by delivery, Indorsement, Holder, Holder in due course, Dishonour.

4. Explain the meaning of the term "Acceptance" and its legal signification. In what forms may Acceptance be made under the Act, and explain each, and state what is essential to a valid Acceptance.

5. What is meant by the "Negotiation" of a Bill? And explain how this may be done under the Act.

6. What is necessary to an Indorsement for negotiation? Name and define the different kinds of Indorsement referred to in the Act.

7. Distinguish between a Bill payable "on demand" and one payable "at sight" in regard to (*a*) computation of time of payment, and (*b*) as to presentment for payment.

8. State the engagement of the "Acceptor" of a Bill in virtue of his acceptance, and (*b*) the engagement or liability of the "Drawer" in virtue of his drawing a Bill.

Toronto, 30th January, 1897.

9. One month after date pay to ourselves at the Bank of Montreal, Montreal, five hundred dollars for value received, and charge the same to our account.

A. & Co.

To Messrs. B. & Co.,
Montreal.

(1) (*a*) To which class of Bills does the above belong under the Act? Name and describe the parties thereto. (*b*) What does the instrument on its face imply? (*c*) What could be struck out of it without rendering it invalid? (*d*) Is it negotiable or non-negotiable, and what is implied in the term "negotiable"? (*e*) When does the Bill fall due? State the rule.

10. (2) A. & Co. on making the Bill desire at once to realize on it, and wish to transfer the same to D. & Co.; in what way may it be done, and with what legal effect (*a*) as to A. & Co., (*b*) as to D. & Co., (*c*) as to B. & Co.?

11. (3) D. & Co. on the 15th of February transfer the Bill unaccepted to E., by writing under the signature A. & Co. across the back thereof "D. & Co."; what is the consequence as to D. & Co.? What is necessary at this stage on the part of E., to fix his right against all parties to the Bill?

12 (4) On the 20th February, B. & Co., with E.'s consent *alone*, write across the face of the Bill "B. & Co., payable 20th March, 1897, at the Molson's Bank," and return it to E. What is this act called, and what is the effect upon A. & Co. and D. & Co.?

13. (5) Assume that A. & Co. and D. & Co. have notice of B. & Co.'s act, and assent thereto, when does the Bill fall due? Is anything further necessary, and if so what, in order to fix finally the liability to E. of the other parties to the Bill?

14. (6) Assume that E. holds the Bill as drawn, without any presentment to B. & Co., until 6th March, 1897, and then presents it to them when it is accepted generally, what is the effect upon A. & Co. and D. & Co.? When is the Bill then payable?

15. (7) Assume the Bill above mentioned to read "On demand pay, etc.;" when should it be presented for acceptance and for payment respectively?

16. (8) Assume it to read "At sight pay," what would be E.'s obligation as holder? When would the Bill become due if accepted?

17. (9) Assume the above Bill accepted generally; change it into the form of a Promissory Note, preserving the liability of the parties.

18. (10) Assume the Bill as drawn by A. & Co., to have come into possession of D. & Co., without delivery by the Drawers, and the indorsation "A. & Co." on the back to have been forged by D. & Co., and the instrument after acceptance subsequently transferred by them to E. as above mentioned for valuable consideration, and without knowledge of the forgery; what are E.'s rights against the several parties to the Bill? State shortly your reasons.

MINORITY, TUTORSHIP, EMANCIPATION, INTERDICTION AND CURATORSHIP.

3rd April.

Professor.....L. H. Davidson, Q.C., D.C.L.

1. To whom under the Law of this Province may a Tutor be appointed, and to whom a Curator? Explain briefly the powers of each as to the person and property.

2. Distinguish between the Paternal and Tutorial power in the case of minors.

3. Explain what is involved in the provision of Law that "all Tutorships are dative," and show how our law differs from the Roman Law in this respect.

4. Explain the relation and the powers of the Family Council and of the Court or Judge, and the limitation if any upon either, in regard to the appointment of a tutor or a subrogate-tutor to a minor.

5. Discuss briefly the effect upon the appointment of a tutor of (*a*) failure to notify all the members of the Family Council, and (*b*) failure to nominate and appoint a subrogate tutor.

6. State and explain any exception there may be to the rule that only one tutor shall be appointed to each minor. How does Toullier regard this rule?

7. When may a tutor *ad hoc* be appointed, and refer to decided cases on this point?

8. State and explain the principal grounds of "Excuse" and of "Incapacity or Exclusion" respectively in regard to tutorship. When should claims of exemption or exclusion be made, and how are they determined? What is the position of the person nominated whilst such claims are under consideration or appeal?

9. How may "Emancipation" be obtained under the Code, and explain in what respects the provisions of our Law differ from those of the Code Napoleon and the Roman Law? Explain briefly what is the position of the "emancipated minor," and compare it with that of the minor in trade "reputed to be of full age."

10. For what causes may "Interdiction" be granted under the law of this Province, and distinguish between the several causes? What should be the guiding principle in determining upon an application for Interdiction? Who may make application, and explain in this connection the case of Clement & Francis? How should the application for Interdiction be supported?

11. How many classes of "Curatorships" exist under the law of this Province and what are the subdivisions of each?

12. Distinguish between the position of a "Curator" and that of a "Judicial Adviser," both as to the person to whom the appointment is made and as to the powers of the person appointed.

MERCHANT SHIPPING, AFFREIGHTMENT, BOTTOMRY AND RESPONDENTIA.

Professor,..... .....L. H. Davidson, Q.C., D.C.L.

1. What is a British ship under the terms of the Merchant Shipping Act, 1894, Imperial?

2. How is the property in a British ship divided, and how many individuals may at any one time be registered as owners? Distinguish between the owner of a "fractional part" of a share and "joint owner" as to registration?

3. What is the character, purpose and use of the Certificate of Registry granted by the Registrar on completion of the registry of a ship, and what rights if any may be obtained upon or to it by an owner or mortgagee?

4. How may a registered British ship or a share therein be transferred, and state briefly what is necessary on the part of the transferee to obtain registry ? What is the effect of transmission of a share to an unqualified person under the Act ? And what steps may be taken to secure the interests of the unqualified person, and also to secure enregistration ?

5. What is necessary to a valid mortgage of a ship or share therein under the Imperial Act, and what is the position of the mortgagee and of the mortgagor as to the ship or share ? Explain briefly the position and powers of each. In case of several mortgages existing upon the same vessel how is the order of priority determined ?

6. Explain briefly what is meant by the "Official Log" of a ship, what its contents, manner of keeping and the effect of entries therein duly made.

7. Distinguish between a "Passenger and an "Emigrant" ship, and state the chief provisions of the Imperial Act tending to secure the safety, comfort, health and maintenance (after the arrival) of Emigrants.

8. Explain the terms Jetsam, Flotsam, Derelict and Salvage, and state whether the latter is payable under the Dominion Act for saving life, and if so to whom and what the claim attaches, and its ranking in comparison with other claims for Salvage.

9. Explain the terms "Master," "Seaman," and "Pilot" as used in the Imperial and Dominion Acts. By whom is the Master appointed, and how is his competency secured ?

10. Explain what is included under the term "Seaworthy" as applied to ships, and to whom the responsibility of securing seaworthiness attaches ?

11. Mention in their order the chief ancient systems or Codes of Maritime Law shortly describing each.

12. To what class of *things* as well under the English Law as under the Code do ships belong ? And explain the differences if any between them and other *things* of the same class as to ownership, transfer and possession.

13. Distinguish between the "Master of a ship" and the "Ship's husband," and state briefly the duties of the latter and his powers.

14. Explain briefly the position of the Master and his duties, in regard to the owners of the ship, owners of goods, insurers (of the ship goods or freight), and passengers respectively.

15. In what way may contracts of Affreightment be made, and explain each ?

16. Explain the terms Freight, Primage, Average and Demurrage.

17. What is the Bill of Lading, and how may it be transferred, and what is the effect of such transfer ?

18. What are the obligations of the master and owners of a vessel in regard to the freight, and what are their rights or claims upon it ?

19. Distinguish between Bottomry and Respondentia. Explain under what circumstances the master may enter into such contract and bind the owners ?

20. What power has the master of a vessel in regard to the sale of the same, and under what circumstances may the right be exercised by him ? Explain briefly.

CRIMINAL PROCEDURE.

MONDAY, 29TH MARCH.

Examiner, ... PROF. WURTELE, D.C.L.

1. What Legislative body has the power to legislate on Criminal Procedure, and by what authority is this power conferred ?

2. By what Legislative Body are the Courts of Criminal Jurisdiction organized, and by whom are the judges and the officers of the courts appointed ?

3. Where is the jurisdiction of the various courts defined ?

4. What jurisdiction is conferred on Judges of the Sessions, with respect to indictable offences ?

5. Define the attributions of Justices of the Peace?

6. Describe the procedure which takes place before a justice of the peace when an information is laid charging a person with the commission of an indictable offence?

7. In what cases are justices of the peace authorized to accept bail?

8. Under what circumstances can Bills be preferred and submitted to the Grand Jury?

9. What is the procedure before the grand jury, and when should it find true bills?

10. What special pleas may be pleaded to an indictment?

11. What is a mixed jury and when should it be asked for?

12. How many kinds of challenges are there, and how are they exercised?

13. When and for what purpose can the depositions taken at the preliminary inquest be used at the trial?

14. To what circumstances must the evidence in criminal cases be confined?

15. How can a witness be discredited?

HISTORY OF LOWER CANADIAN LAW.

MONDAY, DEC. 14TH:—4 TO 6 P. M.

Examiner,.....PROFESSOR McGOUN.

1. Trace the resemblance between the Roman Emphyteutic lease, and the seigniorial tenure of feudal times.

2. What was the difference between lands held *en fief*, and lands held *en roture*?

3. Define *cens et rentes*, and *lods et ventes*.

4. When and how was the Custom of Paris introduced into Canada?

5. What is the "Extrait des Messieurs," and by whom was it drawn up?

6. Whence do we derive the institution of community of property between consorts, and what is the nature of that system?

7. By what ordinance was the reduction to writing of the Customs of France authorized, and when were the Customs of Paris and Orleans published pursuant thereto?

8. When was the Sovereign Council established, and what was its composition at first and after the two principal changes?

9. What were the functions of the Intendant, and name some who held this office?

10. What is the nature of the ordinance of 1667?

11. What was the Code Michaud; by whom drawn up? And give your opinion whether it came into force in Canada?

12. Mention some primitive Codes of Roman Law that influenced the growth of the Customs in France.

LAW OF PRIVILEGES AND HYPOTHECS.

THIRD AND SECOND YEARS.

Examiner :—Professor McGoun.

1. Define a privilege, and explain what is meant by its being indivisible in its nature.

2. If a privileged creditor for $1,000 have transferred part of his claim, say $400, to another, with subrogation, and if the property be sold for $500, how do the original creditor and the transferee rank : first, when the transfer was with warranty of payment ; secondly, when it was not ?

3. What are the remedies of the unpaid vendor, and within what delay can they be respectively exercised, in the case of insolvent traders ?

4. What is the difference, if any, between an English mortgage and our hypothec ?

5. In an hypothecary action, can the costs of a previous personal action be included ?

6. What property is liable to tithes ?

7. In what manner can judicial hypothec be made available to secure a suretyship bond in appeal ?

8. When was the Registry ordinance passed ; and how did hypothecs rank : first, before the registry ordinance ; and secondly, since the Code ?

9. Give the conclusions of an hypothecary action.

10. If a property be alienated by the defendant, during the pendency of an hypothecary action, what is the effect of a judgment maintaining the action ?

11. What is the effect of a Sheriff's sale in regard to hypothecs ?

12. What is confirmation of title ?

LAW OF PRIVILEGES AND HYPOTHECS.

FIRST YEAR.

Examiner :—PROFESSOR MCGOUN.

1. Define a privilege, and explain what is meant by its being indivisible in its nature.

2. Among the privileged claims on moveable property, give an instance of those that are general, upon all the property ; and those that are special, affecting some property only.

3. Under l w costs, state whether the following are privileged :—

First, costs in appeal.

Secondly, costs in a contested case.

Thirdly, costs of a defendant who makes the seizure under which the property is sold ?

4. What are the remedies of the unpaid vendor, and within what delay can they be respectively exercised, in the case of insolvent traders ?

5. If a lease extends over three years, and the tenant becomes insolvent at the end of the tenth month of the first year, for what period is there privilege in favor of the landlord ?

6. What property is liable to tithes ?

7. In what form must conventional hypothec be granted, and are there any exceptions ?

8. Give the conclusions of an hypothecary action.

9. If the buildings on an immoveable property are burned, does the hypothec attach to the insurance money ?

10. What is the effect of a Sheriff's sale in regard to hypothecs ?

CIVIL LAW.

WEDNESDAY, DECEMBER 16TH :—AFTERNOON, 4 TO 6.

Examiner,.....PROF. FORTIN.

1. How is the quality of British subject acquired? How is it lost? What rights cannot be exercised by aliens?

2. What are the causes of civil death? What are its effects?

3. What is an absentee? When and under what conditions may personal possession be obtained? What rights are conferred by provisional possession? By absolute possession? *Quid* if the absentee reappear during provisional or absolute possession?

4. What are the qualities and conditions necessary for contracting marriage?

5. What persons can oppose marriage and in what order?

6. What is the difference between a marriage null and one that can be annulled (*annulable*)? What are the grounds of absolute nullity? Of relative nullity?

7. What is a marriage *putatif*? What effects does it produce?

8. What are the obligations arising from marriage? Who can claim alimony? From whom? In what order?

9. Explain the rule : *Pater is est quem nuptiae demonstrant?* What does it prove? To what children does it apply?

10. When can a child be disowned? Who can bring action *en desaveu?* Within what delay? Is a direct action necessary?

SALES OF IMMOVEABLES.

Examiner,..... PROF. MARLER, B.A., B.C.L.

1. Define the Contract of Sale.

Is the definition of the Code complete? State any difference in principle introduced by the Code.

2. State in general terms the obligations to which the parties to a sale become liable to each other.

3. What is the result of the sale of a thing not belonging to the seller? Give your reasons and any exceptions to the principle.

*4. A. is tutor to his minor children B. and C.

He owns one-h and his children the other half of a property insusceptible of adv. ageous division.

A. is authorized by the judge on the advice of a family council to sell the property by licitation on conditions in accordance with which it is sold and bought in by A. for himself.

Under what circumstances is the sale valid?

5 What is delivery?

How is delivery of land made?

Are there any distinctions to be observed if the sale be by measurement or *en bloc*?

*6. What titles is the seller to furnish?

7 A. sells to B. a vacant lot 25 by 100 feet for $2,500; on measurement, it turns out to contain 24 by 90 feet.

(*a*) What are the rights and obligations of the parties?

(*b*) What difference would, in your opinion, result if the measurements were *more or less*?

8. If the lot were 24 by 90 feet at same price, and it is found on measurement to exceed, what are B's rights?

9. In either of these cases, suppose the property were a lot covered by buildings?

10. What are the objects of warranty?

11. To what warranty is the seller bound if the contract be silent; and against what claims in such case is the seller bound to warrant the purchaser?

12. Give briefly the modes in which the effects of warranty may be added to or diminished.

13. What is the effect of the right of redemption?

*14. A property is sold by A. to B. for $5,000,—$1,000 cash and $4,000 on terms agreed upon.

It is found that a hypothec for $10,000 affects the property, of which B. is ignorant.

What are B.'s rights before the deed is signed and a ter?

CIVIL LAW—GIFTS.

FRIDAY, DECEMBER 18TH:—AFTERNOON, 4 TO 6.

Examiner,.....PROF. DOHERTY, D.C.L.

1. What are the essentials of the Gift *inter vivos?*

2. What capacity is required in the donor? What in the donee? At what periods are these capacities required to exist, when the gift and acceptance are made at different times?

3. What changes affecting the freedom of disposal of property by gift *inter vivos* have been made by the Code?

4. What do you understand by the rule *donner et retenir ne vaut?* Mention some dispositions of our law which are applications of this rule.

5. What differences exist between the effect of the revocation of a gift, by reason of the fulfilment of a resolutive condition, and its revocation by reason of ingratitude? Give reason for such differences?

6. By whom, to whom and how can gifts of future property be made? What is the effect of such gifts where validly made?

CIVIL LAW—WILLS AND SUBSTITUTIONS.

SATURDAY, MARCH 27TH:—3 TO 5 P. M.

Examiner,.....PROF. DOHERTY, D.C.L.

1. What forms of wills are recognized by our law? What are the essential requirements for validity in each form?

2. A. by his will bequeathes a particular property to B., charging him to pay a special legacy of $5,000 to C., and constitutes D. his universal residuary legatee.

B. dies before, and C. and D. survive A. How are the legacies to B. and C. affected by the predecease of B.?

3. A. bequeathes a specific property to B. and C. to be divided between them in equal shares. B. dies before A., and C. survives him. To whom does the share B. would have taken in the bequeathed property fall? To whom would it have fallen had A. prescribed a division between them in unequal shares? To whom would it have fallen had the bequest been of one-half of the property to B. and one-half to C.?

Give reason of your answers.

4. A. bequeathes to B. a property hypothecated for an indebtedness of $5,000, which is a debt of the testator and remains unpaid at his death. He leaves the residue of his estate $\frac{1}{2}$ to C., $\frac{1}{4}$ to D., and $\frac{1}{4}$ to E.

B. sued hypothecarily pays the debt. What recourse, if any, has he and against whom? What recourse would he have if the debt were that of a third person? Give reasons of your answers?

5. A. bequeathes a property to B. on his attaining his majority. B. survives A., but dies in his twentieth year. Does the property bequeathed pass to B.'s heirs? If so, why so? If not, why not?

6. A. gives a property to B, with substitution in favor of C.? By the deed A. stipulates a life-rent and other charges in his own favor, which exceed in value the property given. Is the substitution valid?

Give reason for your answer.

7. A. Bequeathes a property to B., with substitution in favor of B.'s children. B. dies leaving no children, but several grandchildren. Does the substituted property pass to the grandchildren? If not, to whom does it pass?

Reason for your answers.

8. A. bequeathes a property to B. with substitution in favor of C. C. predeceases B., leaving several children? Does the substituted property pass to such children?

Reason for your answers.

9. A., having by deed of donation, accepted by B., given a property to B. with substititution in favor of C., by a subsequent act revokes the substitution. What is the effect of such revocation? C. survives B. At B's death to whom does the property pass? To whom would it have passed had C. died before B? What would be the effect of such revocation had the substitution been in favor of B's children?

10. A. bequeathes a property to B. with substitution in favor of C.

The substitution is not registered. At B's death C. claims the property from B's heirs? Can the latter invoke the want of registration?

Had B. during his lifetime sold the property could the purchaser invoke the want of registration against C.?

Reason for your answers.

SALES OF MOVEABLE PROPERTY.

THURSDAY, 17TH DECEMBER:—4 TO 6 P.M.

Examiner,..... PROF. E. LAFLEUR.

1. A sale of a determinate quantity of moveables is made for a fixed price paid in cash. Before delivery is made the seller becomes insolvent, and his curator claims the goods as belonging to the creditors. The purchaser had no suspicion of the insolvent condition of the vendor at the time of the sale. Discuss the right of the purchaser to revendicate the goods from the curator.

2. When is the contract formed in a sale of goods by correspondence? Cite the leading case here, and compare our law with the English law on the subject.

3. What is the effect of the sale of a thing which does not belong to the seller? Can the buyer recover damages from the seller for breach of contract in such case?

4. What are the owner's rights as to the recovery of property stolen from him and bought by an innocent purchaser? How are the claims of such purchaser affected by the provisions of the Criminal Code?

5. In what cases is the seller relieved of the obligation to deliver the goods sold?

6. When delivery is to be made within a certain number of days, what is the rule as to the hour of delivery?

7. How is a valid delivery made of
   (*a*) Incorporeal things.
   (*b*) Goods in a warehouse.
   (*c*) Growing timber with the right to cut the same?

8. Distinguish between actual and constructive eviction, and state whether in the case of the latter the buyer's claim to warranty is always as extensive as when actual eviction takes place.

9. Enumerate the remedies of the vendor
   (*a*) When the property has not passed.
   (*b*) When the property has passed.

10. Explain the meaning of the word "delivery" in article 1543 C. C. as amended by R.S.Q. 5811 and Q. 54 V., c. 39, providing that the vendor's right to dissolve the sale for non-payment of price must be exercised within 30 days after delivery in case of insolvency. Illustrate your answer by references to decisions as to goods deposited in a bonded warehouse before the insolvency of the buyer.

11. Point out the principal differences between the 17th section of the Statute of Frauds (29 Car. II, c. 3) and article 1235 C. C.

12. What is the effect of false bidding at an auction sale? Would false bidding as to some of the lots offered for sale affect the sale of a lot on which there was no false bidding?

CIVIL PROCEDURE.

SECOND AND THIRD YEARS.

FRIDAY, APRIL 2ND.

TIME, 2 HOURS.

Examiner, ... PERCY C. RYAN, B.C.L.

1. State in what cases and within what delays the petition in revocation of judgment (*requête civile*) lies.

2. What are the powers and duties of the curator to property abandoned by traders who have ceased their payments?

3. Explain the nature and scope of Conservatory Attachment.

4. Describe what is meant by the "assignment of facts" in jury trials.

A. sues B. for $1,000 damages caused by the non-shipment of a cargo of hay which B. had agreed to deliver to A. Both parties are traders. Can a jury trial be had?

5. Indicate the proceedings up to judgment in an action for confirmation of title.

6. Give the conclusions in an action based upon an obligation and hypothec

(*a*) Against the original hypothecary debtor;

(*b*) Against a person who has acquired the property as a third holder (*tiers détenteur*).

7. What rules apply to possessory actions?

8. A. and B. are neighbors whose property is divided by a line fence.

The boundaries have never been judicially determined. B. assumes the right to move the fence to the other side of a ditch, which is apparently on A's side, and claims that the ditch is the boundary. What is the appropriate remedy for A.?

What are the formalities subsequent to judgment which a successful plaintiff in a suit for separation from bed and board must observe?

CIVIL PROCEDURE..

FIRST YEAR.

JANUARY 9TH.

Examiner,..... PERCY C. RYAN, B.C.L.

1. What is an Action? State and define the different classes of actions.

2. Describe the jurisdiction of the Superior Court and of the Circuit Court.

3. What is the declaration? Describe its several parts, and their relationship and importance.

4. Draw a plea of compensation.

5. In what cases does a dilatory exception lie?

6. What formalities are peculiar to:

(*a*) Suits against public officers for damages by reason of acts done in the exercise of their functions? (*b*) Proceedings *in forma pauperis?*

PRELIMINARY COURSE.

PROFESSOR DAVIDSON, D.C.L.

13TH MARCH.

1. Define the meaning of the word "Law" generally speaking.

2. What are the main divisions of Law in general, and define each?

3. What is meant by "Municipal Law," and explain briefly its several ingredients ?

4. What is implied by the term "Government," and where does the power of making Laws reside as an element of Government

5. Explain the terms Declaratory, Directory, Remedial and Vindicatory as applied to laws enacted by the State.

6. Distinguish between a General and Public Act, and a Special or Private Act of the Legislature.

7. State the principal Rules for the interpretation of an Act or Statute in case of doubt. Whence have these rules been derived ?

8. Distinguish between "*Jura personarum*" and "*Jura rerum* ?

9. Explain what is meant by the "Right of personal security" and what is included in it ?

GENERAL EXAMINATION.

FOR THIRD YEAR STUDENTS ONLY.

TUESDAY, 13TH APRIL :—2 TO 6 P.M.

1. Define the term "Status" as used in Roman Law, and mention and explain shortly its constitutive elements.

2. Name and distinguish between the principal "Rights over things" under the Roman Law. Mention and explain briefly how "Real rights" were acquired.

3. Explain the term "Obligation" under the Roman Law, and in this connection the words *dare, facere, praestare.*

4. Distinguish between personal and real Servitudes under the Roman Law, and mention the chief divisions of each. How were Servitudes generally, extinguished ?

5. Define briefly the term *Patria potestas*, and explain who were included under it.

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1. How are parties to Offences classified under the Criminal Code of Canada, and define ?

2. What are the elements of a "Common Nuisance," and explain the distinction between Nuisances which are Criminal and those not Criminal?

3 Define the crime of "Theft" according to the Criminal Code, and explain the distinction between it and "Larceny" under the former law.

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1. Detail and define the leading classes of Contracts, and state to which of such classes the several Contracts of Sale, Deposit, Letting for Hire and Exchange belong.

2. Explain the distinction between a Contract and a Quasi-Contract and mention and define the classes of the latter.

3. State the principal causes of nullity in Contracts; define and briefly explain each.

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1. Define the contract of "Mandate," and point out some of the differences between it and that of "Commercial Agency." Show in what respect the principles of Agency apply to the Contract of Partnership.

2. Distinguish between a general and anonymous "Partnership" and between a "Partnership" and a "Joint Stock Company." What is the position of a special Partner in a Limited Partnership; and compare it with the position of a Shareholder in a Joint Stock Company?

3. Explain the meaning of the Indorsement of a Bill or Note, and mention the several forms in which such Indorsement may be made, and the effect of each.

4. Distinguish between "Capacity" and "Authority" as to parties to a Bill or Note.

5. Define the Contract of Insurance and mention its several subdivisions. State what may be the objects of Insurance. Distinguish between what is a "Warranty" and what a "Representation," and state the effect of falsity as to Warranties. Give an example of an *implied* Warranty in the case of a Contract of Marine Insurance and in one of Fire Insurance.

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1. Mention the different kinds of Suretyship, and define each. In this connection what is meant by the "benefit of discussion," and when and how may it be had by the party entitled to it?

2. Define the Contract of "Pledge," and state to what kinds of property it applies. What is it called in the case of moveable property, and what is the effect, as to the debtor's ownership, of the pledging of a moveable?

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1. What is Representation? In what kind of Successions does it take place, and in what cases?

2. What is the position of an heir who has not yet accepted or renounced, as regards the property and liabilities of the succession to which he is called? How is that position affected by his acceptance or renunciation?

3. What obligations are incumbent upon the lessor resulting from the nature of the contract of lease?

4. What distinction do you make between the position, as toward the principal lessor, of the sub-lessee of a property and of the transferee of the lease of a property?

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1. Enumerate the assets and liabilities of the Community.

2. What does the customary dower resulting from a second marriage consist in when there are children born of the first?

3. What are the principal methods of international territorial acquisition?

4. Give brief illustrations of the following general principles contained in Article 6 of the Civil Code:—

(*a*) The laws of Lower Canada govern the immovable property situate within its limits.

(*b*) An inhabitant of Lower Canada, so long as he retains his domicile therein, is governed, even when absent, by its laws respecting the status and capacity of persons

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1. What law governs prescription as to moveables and personal actions? As to immoveables?

2. What is interversion of title? How is it effected? What is its effect as to prescription?

3. Explain the rule that no one can prescribe against his title? How does it apply to negative prescription?

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1. Of what persons is a Municipal Corporation composed, and of whom the Municipal Council?

2. Who can contest the position and right of a Member of Council? How is the contestation made? Before what tribunal?

3. *Quid* if a Councillor resign before the decision of the contestation? How is his successor appointed?

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1. When and how was the Custom of Paris introduced into Canada?

2. What custom formed the basis of Pothier's commentaries, and why are his writings especially important in Lower Canadian law?

3. Which of the great ordinances of Louis XIV. were introduced into Canada?

4. What are the chief constitutional acts relating to Canada since 1760?

5. What are the provisions of the British North America Act, relating to Federal and Provincial power of taxation?

UNIVERSITY SCHOOL EXAMINATIONS, 1897.

ORDINARY A. A.

AND

PRELIMINARY SUBJECTS.

(In order of date of Examination.)

UNIVERSITY SCHOOL EXAMINATIONS.

ORDINARY A. A.

PRELIMINARY SUBJECTS.

DICTATION.

MONDAY, MAY 31ST :—MORNING, 10.30 TO 11.15.

The death of Nelson was felt in England as something more than a public calamity : men started at the intelligence, and turned pale ; as if they had heard of the death of a dear friend. An object of our admiration and affection, of our pride and of our hopes, was suddenly taken from us ; and it seemed as if we had never, till then, known how deeply we loved and reverenced him. What the country had lost in its great naval hero —the greatest of our own, and of all former times, was scarcely taken into the account of grief. So perfectly, indeed, had he performed his part, that the maritime war, after the battle of Trafalgar, was considered at an end : the fleets of the enemy were not merely defeated, but destroyed : new navies must be built, and a new race of seamen reared for them, before the possibility of their invading our shores could again be contemplated. It was not, therefore, from any selfish reflection upon the magnitude of our loss that we mourned for him : the general sorrow was of a higher character. The people of England grieved that funeral ceremonies, and public monuments, and posthumous rewards were all that they could now bestow upon him, whom the king, the legislature, and the nation, would have alike delighted to honour ; whom every tongue would have blessed ; whose presence in every village through which he might have passed would have wakened the church bells, have given school boys a holiday, have drawn children from their sports to gaze upon him, and "old men from the chimney corner" to look upon Nelson ere he died.

N.B.—Notes for local Examiner.

The extract is to be read *three* times.

1. Fluently ; the candidates meanwhile listening only. All pens during this reading to be laid on the desks.

2. Slowly ; the candidates taking it down from dictation.

The examiner will indicate only semicolons, full stops and quotation marks.

3. For final revision and punctuation.

Any word may be repeated at the request of a candidate. The examiner shall not give any further aid.

Candidates shall be told to write distinctly, and warned that an attempt to make a symbol do double duty (for instance, a doubtful *i* or *e*) is useless.

PRELIMINARY SUBJECTS.

ENGLISH COMPOSITION.

MONDAY, MAY 31ST: -MORNING, 11.15 TO 12.

1. Write the following extract, correcting its spelling and inserting necessary punctuation:

I was a hypocondriac lad and the sight of a boy in fetters upon the day of my first putting on the blue cloathes was not exactly fitted to asuage the natural terrors of initiation. I was of tender years barely turned of seven and had only read of such things in books or seen them but in dreams. I was told he had run away. This was the punishment for the first offence. As a novvice, I was soon after taken to see the dungens these were little square Bedlam cells where a boy could just lie at his length upon straw and a lankit—a matress I think was afterwards substituted—with a peep of light let in askanse from a prison orrifice at top.

2. Write in correct English :—

(*a*) Newton invented the law of gravitation.

(*b*) The Board of Education has resolved to erect a building large enough to accommodate five-hundred students three storeys high.

(*c*) She only lived for her child.

(*d*) He bears this with great equanimity of mind.

(*e*) This is the man whom they thought was a clergyman.

3. Write an essay (not exceeding one page) on *one* of the following subjects :—

A day's outing.
Kindness to animals.
Books.

PRELIMINARY SUBJECTS.

ENGLISH GRAMMAR.

MONDAY, MAY 31ST :—MORNING, 9 TO 10.3 .

(N.B.—Two questions only to be answered from each section: of these, number seven must be one.)

I.

1. Form the plurals of pailful, forget-me-not, spend-thrift, lord-lieutenant, Miss Ross, hanger-on, crocus, criterion, formula, reef.

2. Give examples of adjectives that are capable of being used substantively. What kinds of adjectives are *not* used in the following sentence ?—" Every man did that which was right in his own eyes."

3. Write in tabular form the inflections of the personal pronouns.

II.

4. Write three short sentences in which the nom. poss. and obj. cases of " who " used as a relative pronoun respectively occur.

5. Give transitive verbs corresponding to fall, lie, sit, rise. Distinguish between transitive and intransitive verbs.

6. What is the subject of a sentence ? Give examples of five different kinds of subjects.

III.

7. Parse the words in italics :—

For who, to dumb *forgetfulness a prey*, *This* pleasing anxious *being e'er* resigned, Left the warm *precincts* of the cheerful day, Nor cast *one longing* lingering look *behind ?*

8. Construct three sentences ; the first must contain a clause equivalent to an adverb, the second a clause equivalent to an adjective, and the third a clause equivalent to a noun.

9. Construct a complex sentence with two subordinate clauses. Analyze the sentence so constructed.

A. A. EXAMINATIONS.

ALGEBRA.

MONDAY, MAY 31ST :—AFTERNOON, 2 TO 3.30

1 Reduce the following fractions to their lowest terms :—

(*a*) $\dfrac{6x^2 + 13x + 6}{8x^2 + 6x - 9}$.

(*b*) $\dfrac{a - b^6}{a^4 - b^4}$.

(*c*) $\dfrac{3x^3 - 13x^2 + 23x - 21}{6x^3 + x^2 - 44x + 21}$.

2. Find the value of

$$\frac{x}{x^2 - y^2} - \frac{y}{x^2 + y^2} + \frac{x^3 + y^3}{y^4 - x^4} + \frac{xy}{(x + y)(x^2 + y^2)}$$

3. Extract the square root of

$$9x^4 + 4a^4 + 37a^2x^2 - 30ax^3 - 20a^3x,$$

and write out the expansions of

$$(2a^3 - a^2 + ab - 3b^2)^2 \text{ and } (ax + by)^3.$$

4. The length of a floor exceeds the breadth by 3 feet ; if each were increased by 2 feet the area of the floor would be increased by 54 square feet. Find the dimensions of the floor.

5. Solve the equations :

(*a*) $\dfrac{2x - 5}{5} + \dfrac{x - 3}{2x - 15} = \dfrac{4x - 3}{10} - 1\dfrac{1}{10}$.

(*b*) $\begin{cases} 4x + 2y + z = 20, \\ x - \dfrac{y}{3} - \dfrac{3z}{2} = 6, \\ 3x + 4z = 4. \end{cases}$

(*c*) $2x^2 - 11x + 12 = 0$.

(*d*) $\dfrac{3}{5 - x} + \dfrac{1}{4 - x} = \dfrac{8}{x + 2}$.

6. Multiply $3a^{\frac{2}{5}} - 4a^{\frac{1}{5}} - a^{-\frac{1}{5}}$ by $3a^{\frac{1}{5}} + a^{-\frac{1}{5}} - 6a^{-\frac{3}{5}}$ and rationalize the denominator of

$$\frac{\sqrt{x^2+1} + \sqrt{x^2-1}}{\sqrt{x^2+1} - \sqrt{x^2-1}}.$$

7. A and B working together do a piece of work in $33\frac{1}{3}$ days: if A alone takes 15 days less to do the work than B would take to do it alone, find in what time it would take B to do the work alone.

FRENCH.

LUNDI, LE 31 MAI:—DE 2 A 4.

I.

(*a*) Faire des questions qui conviennent aux réponses suivantes:

Je vais bien, merci.
Oui, je suis venu à pied.
Il est onze heures.
Parce qu'il ne pleut pas.
Je préfère l'été.
J'en ai cinq.
Elle est dans ma poche.
A midi.
Je m'appelle Jean.
$4 \times 5 = 20$.

(*b*) Faire l'analyse grammaticale et logique de la phrase suivante:

La mort est un chameau noir qui s'agenouille devant toutes les portes (Proverbe turc.)

(*c*) Donner les temps primitifs de dix verbes irréguliers.

(*d*) Remplacer les tirets par des mots que le sens exige:—

Un domestique entra —— jour de très-grand matin —— —— chambre à coucher —— Frédéric le grand —— le réveiller, —— son ordre. Le roi, qui —— sentait pas encore la moindre envie —— —— lever, lui dit: Laisse- —— dormir encore —— peu, je —— très fatigué.—Votre Majesté —— 'a ordonné —— venir de —— heure, répondit le domestique.— Encore un quart —— 'heure seulement, te dis-je. Pas —— minute, sire, —— —— quatre heures, et il faut —— lever. Bon, dit le roi —— —— levant, tu —— —— —— garçon; voilà comme j'aime qu'on —— son devoir.

N.B.—Les Candidats sont priés de répondre en français exclusivement et de vouloir bien se servir d'un cahier séparé pour chaque chapitre.

II.

Traduire en Anglais un des passages suivants:

(*a*) Tout le monde était en grande toilette, et tous les yeux étaient fixés sur le petit oiseau, qui, de son perchoir, regardait cette brillante assemblée avec le calme le plus parfait. Enfin il se mit à chanter d'une manière si admirable que les larmes vinrent aux yeux de l'empereur. Oui, les larmes coulaient sur les joues de l'empereur, et le rossignol chantait de mieux en mieux. Sa voix allait jusqu'au fond du cœur. L'empereur en était si content qu'il voulut que le rossignol portât sa pantoufle d'or autour du cou ; mais le rossignol refusa. Sa récompense était assez grande déjà.

"J'ai vu des larmes dans les yeux de l'empereur. C'est pour moi le plus riche trésor. Les larmes d'un empereur ont une valeur particulière ; nulle décoration ne vaudrait pour moi une seule de ces larmes;" et làdessus il chanta de son mieux.

(*b*) C'était entre la Lorraine et la Champagne que naquit, à Dom. rémy, la belle et brave fille qui devait porter si bien l'épée de la France. Jeanne était la troisième fille d'un laboureur, Jacques Darc. Tandis que les autres enfants allaient avec le père travailler aux champs ou garder les bêtes, la mère tint Jeanne près d'elle, l'occupant à coudre ou à filer. Elle n'apprit ni à lire ni à écrire ; mais elle sut tout ce que savait sa mère des choses saintes. Elle reçut sa religion, non comme une leçon, une cérémonie, mais dans la forme d'une belle histoire. Nous avons sur la piété de Jeanne un touchant témoignage, celui de son amie d'enfance, de son amie de cœur, Haumette, plus jeune de trois ou quatre ans. "Que de fois, dit-elle, j'ai été chez son père. C'était une bien bonne fille, simple et douce. Elle allait volontiers à l'église et aux saints lieux. Elle filait, faisait le ménage, comme les autres filles."

Traduire en français un des passages suivants :

(*a*) Several ladies and gentlemen are coming to the University tomorrow morning ; will you not help us to receive them ? They will not stay long. I should like to show them the beautiful things which have just arrived from India. They are in the large room up stairs, on the left hand. If you go up, don't forget to look at the views. You will see them better, if you don't go too near.

(*b*) I have just left a young man with a last year's bicycle for sale. He would like to get fifty dollars for it, but I think he will find no buyers at that price. There are so many good machines on the market this year, cheap and perfectly new, that an old one has not much chance of being sold. If you are disposed to buy, do not forget that you will have other expenses. For instance, you will need a license.

A. A. EXAMINATIONS, JUNE, 1897.

PRELIMINARY—ARITHMETIC.

TUESDAY, JUNE 1ST:—MORNING, 9 TO 10 30.

Answer two questions from each division. All work must be shown; results alone will not be accepted.

SECTION I.

1. Simplify

$$\frac{8\frac{3}{5} - 7\frac{3}{4} + 5\frac{2}{3} - 4\frac{1}{2}}{13 - 11\frac{9}{10} + 10\frac{7}{9} - 9\frac{17}{20}} \times \frac{3}{11} \text{ of } \frac{365}{72}$$

and reduce the result to a decimal fraction.

2. If 6 compositors working 8 hours a day for 10 days set up the type for a book of 720 pages, having 45 lines on a page, how many hours a day must 9 compositors work to set up the type for a similar book of 540 pages of 48 lines on a page in 4 days?

3. (*a*) Reduce 4 mi. 12 per. 5 yds. 6 in. to inches, and show that the work is correct by changing the result into miles, etc.

(*b*) Find the value in Canadian currency of £12 6s.

SECTION II.

4. Extract the square root of 1892.25.

(*a*) A moat 39 feet broad closely surrounds a wall 52 ft. high. How long a ladder will be required to just reach the top of the wall from the outer edge of the moat?

5. Define Premium, Days of Grace, Brokerage, Discount.

(*a*) Find the difference between the True and the Bank Discount on $165.60 for 3 yrs. @ 5 per cent.

6. A father dies leaving $1,690 to be paid to his son John at the end 3½ years with simple interest @ 5½ per cent., and $1,728 to his son James to be paid at the end of the same period with compound interest @ 5 per cent. How much does each eventually receive?

SECTION III.

7. Give the table of weights and measures in the Metric System.

(*a*) A wheel of a bicycle is 2 metres in circumference. How many times does the wheel revolve in going five miles?

8. A room 30 ft. long, 24 ft. wide and 12 ft. 6 in. high contains 3 windows, each 6 ft. by 3 ft., and 2 doors, each 7½ ft. by 3½ ft. The base-board is 6 in. wide. How much will it cost to paper the room with paper 27 in. wide, and worth 21 cents per yard ?

9. How many cubic metres of water are contained in a rectangular tank 625 cm. long, 160 cm. wide and 80 cm. deep ? How many litres ? How many kilograms ? How many gallons ?

CANADIAN HISTORY.

TUESDAY, JUNE 1ST :—MORNING, 10. 30 TO 12.

1. Answer any three of the following questions :—

(*a*) Describe the relations of Frontenac with the Indians and the New England colonists.

(*b*) Indicate the importance and trace the fortunes of Louisbourg.

(*c*) Write what you know about boundary disputes between the United States and Canada.

2. Make brief but precise notes on: Poutrincourt, Mme. de la Tour, Jesuit missions, expulsion of the Acadians, Carillon, Vaudreuil, "Family Compact," Chrysler's Farm, Louis Papineau, Reciprocity Treaty of 1854.

3. Assign events to 1534, 1629, 1641, 1774, 1842.

4. Outline the main political events of 1842-67.

BRITISH HISTORY.

Answer any three parts of question 1, and two of the other questions.

1. (*a*) Sketch the reign of Edward the Confessor.

(*b*) Describe the relations of England and Scotland during the reigns of Edward I. and Edward II.

(*c*) Give as long a list as you can, with dates, of the domestic disturbances which took place under the Tudors.

(*d*) Explain Cromwell's policy towards Ireland, Scotland, and the continental states of Europe.

(*e*) Name ten great naval engagements in which England has taken part.

2. Make brief but precise notes on:—Penda; Hengsdown Hill; Edmund Ironside; *Curia Regis;* Anselm; Third Crusade; Provisions of Merton; Battle of Herrings; Treaty of Pecquigny; Act of Supremacy; Petition of Right; Titus Oates; Ramillies; Gordon Riots Cawnpore.

3. Assign dates to:—Death of Alfred the Great; Battle of Stamford Bridge; Constitutions of Clarendon; Mise of Lewes; Wat Tyler's Revolt; Capture of Calais; Execution of Charles I.; Trial of the Seven Bishops; Battle of Plassey; Repeal of the Corn Laws.

4. Trace minutely the geographical development of the British Empire as it exists to-day.

A. A. EXAMINATIONS.

GEOMETRY.

TUESDAY, JUNE 1ST:—AFTERNOON, 2 TO 4.

Obligatory:—((1), also (4) or (9), and any other five, seven in all; references required either by number or substance.

1. Give definitions of plane superficies, plane angle, parallel straight lines, parallelogram. Prove that if the opposite angles of a quadrilateral are equal the figure is a parallelogram.

2. Parallelograms on the same base and between the same parallels are equal to one another.

3. To a given straight line to apply a parallelogram which shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

4. The straight line joining the middle points of any two sides of a triangle is parallel to and half of the third side. The middle points of the four sides of any quadrilateral form the corners of a parallelogram.

5. Define, with figure, a gnomon: If A B bisected in C and produced to D the rectangle A D D B together with square of C B = square on C D.

Prove this and exhibit your result in the form:—"difference of squares of two straight lines = product of sum and difference."

6. To describe a square that shall be equal to a given rectilineal figure.

7. If any two points be taken in the circumference of a circle, the straight line which joins them shall fall within the circle.

8. The angles in the same segment of a circle are equal to one another.

9. A B C is a triangle, D middle point of base B C; prove that (*a*) $A B^2 + A C^2 = 2 B D^2 + 2 A D^2$.

(*b*) In a parallelogram prove that sum of squares of diagonals = sum of squares of sides.

A. A. EXAMINATIONS

TRIGONOMETRY.

TUESDAY, JUNE 1ST:—AFTERNOON, 4 TO 5.30.

1. Prove that $\frac{180^\circ}{\sqrt{3}} = 115^g\ 47'$ nearly.

2. (*a*) Define the six trigonometrical ratios of any angle.

(*b*) Arrange them in three pairs of reciprocals.

(*c*) Which form the only pair that can have any value positive or negative?

(*d*) Which two ratios have their squares together equal to one?

(*e*) Which have their squares always differing by *one*?

(*f*) Which two are such that the sum of their squares is equal to product of their squares?

3. Draw figures for the following, shewing to what angle each belongs:

$$\text{sine} = \frac{\sqrt{3}}{2};\ \tan = -1;\ \cot = -1,\ \text{cosec} = \pm 2$$

4. Find the ratios of 120°, 135° and 225°.

5. A person observes the elevation of a tower's top to be 45°, after receding 100 yards on some horizontal plane, the elevation is 30° ; find height of tower ; also find at what point elevation of its top would be 60°.

6. Given tan $a = 3$: find the other 5 ratios.

7. Prove $\cos (A + B) = \cos A \cos B - \sin A \sin B.$
$\sin (A - B) = \sin A \cos B - \cos A \sin B.$

Hence find sin 15° and cos 75°.

A. A. EXAMINATIONS, 1897.

OPTIONAL EXAMINATION.

LATIN.

CAESAR: *Books I* and *II*, VIRGIL: *Aeneid I.*

WEDNESDAY, JUNE 2ND:—MORNING, 10.30 TO 12.

1. Translate Caesar, Bell. Gall. I, c. 40:

Haec cum animadvertisset, convocato consilio omniumque *ordinum* ad id consilium adhibitis centurionibus vehementer *eos* incusavit: Primum quod aut quam in partem aut quo consilio ducerentur sibi *quaerendum* aut cogitandum putarent. Ariovistum se consule cupidissime populi Romani amicitiam appetisse : cur hunc tam temere quisquam ab officio *discessurum* udicaret? Sibi quidem persuaderi *cognitis* suis postulatis atque aequitate conditionum perspecta eum neque suam neque populi Romani gratiam repudiaturum. Quod si furore atque amentia *impulsus* bellum intulisset, quid tandem vererentur, aut cur de sua virtute aut de iosius diligentia desperarent? Factum eius hostis periculum patrum nostrorum memoria, cum Cimbris et Teutonis a C. Mario pulsis non *minorem laudem* exercitus quam ipse imperator meritus videbatur; factum etiam nuper in Italia servili tumultu, quos tamen aliquid usus ac disciplina quam a nobis *accepissent* sublevarent.

Parse fully the words in italics: *i.e.*, *ordinum*, *eos*, *quaerendum*, *discessurum*, *cognitis*, *impulsus*, *minorem*, *accepissent.*

2. Translate, Caesar B. G. II, c. 22:

Instructo exercitu magis ut loci natura deiectusque collis et necessitas *temporis* quam ut rei militaris ratio atque ordo postulabat, cum diversis legionibus aliae alia in parte hostibus resisterent, sepibusque densissimis, ut ante demonstravimus, *interiectis* prospectus impediretur, neque

certa subsidia collocari, neque quid in quaque parte opus esset provideri, neque ab uno omnia *imperia* administrari *poterant*. Itaque in tanta rerum iniquitate fortunae quoque eventus varii *sequebantur*.

Parse fully *temporis*, *interiectis*, *imperia*, *poterant*, *sequebantur*.

3. Draw a map of Gaul at the time of the beginning of Caesar's Gallics War, and state the principal operations of the first two campaigns.

4. Turn into *Oratio Recta*:

(Ad haec Arioviatus respondit:) Ius esse belli ut qui vicissent iis quos vicissent quemadmodum vellent imperarent: item populum Romanum victis non ad alterius praescriptum sed ad suum arbitrium imperare consuesse. Si ipse populo Romano non praescriberet quemadmodum suo iure uteretur, non oportere sese a populo Romano in suo iure impediri. Aeduos sibi, quoniam belli fortunam tentassent et armis congressi ac superati essent, stipendiarios esse factos. Magnam Caesarem iniuriam facere qui suo adventu vectigalia sibi deteriora faceret.

5. Translate: Virgil, Aneid I., 643-656.

Aeneas (neque enim patrius consistere mentem
passus amor) rapidum ad naves praemittit Achaten,
Ascanio ferat haec, ipsumque ad moenia ducat.
Omnis in Ascanio cari stat cura parentis.
Munera praeterea, Iliacis erepta ruinis,
ferre iubet, pallam signis auroque rigentem,
et circumtextum croceo velamen acantho,
ornatus Argivae Helenae, quos illa Mycenis
Pergama cum peteret inconcessosque Hymenaecs,
extulerat, matris Ledae mirabile donum:
praeterea sceptrum, Ilione quod gesserat olim,
maxima natarum Priami, colloque monile
baccatum, et duplicem gemmis auroque coronam.
Haec celerans iter ad naves tendebat Achates.

Scan the first three lines.

Parse fully *passus*, *moenia*, *munera*, *peteret*, *extulerat*, *iter*.

6. Translate the following, adding a note on the meaning or construction of the words underlined:

(*a*) Hic iam ter centum totos *regnabitur* annos.

(*b*) fontem *superare* Timavi.

(*c*) *accestis* scopulos.

(*d*) Tum *victu* revocat vires.

(*e*) *Cerealiaque arma* expediunt.

(*f*) *Reliquias Danaum* atque immitis Achilli.

(*g*) *Maia* genitum demittit ab *alto* ..... ne fati nescia Dido finibus *arceret*.

(*h*) nec vox *hominem* Sonat.

(*i*) caecum domus scelus omne *retexit.*

(*j*) Quisquis es, haud, credo, invisus caelestibus auras Vitalis carpis, Tyriam qui *adveneris* urbem

(*k*) dux femina *facti.*

(*l*) neque cernitur *ulli.*

(*m*) *mediisque in milibus* ardet.

(*n*) *urit* atrox Juno.

7. What do you know of the circumstances under which the Aeneid was written?

A. A. EXAMINATIONS.

OPTIONAL SUBJECTS.

LATIN GRAMMAR AND COMPOSITION.

WEDNESDAY, JUNE 2ND:—MORNING, 9 TO 10.30.

1. Write out all the cases, in combination, of *omnis temporis.*

2. Give the gender, genitive singular, and genitive plural of *heres, senex, flos, navis, ipse, pecus.*

3. Compare *bene, magnus, acer, suaviter, fidelis, dives.*

4. Write in Latin words, 12, 54, 5th, 146.

5. Write in all persons and both numbers:—
(*a*) perf. indic. act. of *doceo.*
(*b*) imperfect subj. act. of *fero.*
(*c*) fut. indic. act. of *eo.*

6. Write down the 1st person singular, perfect indicative active, the supine, and the present infinitive of *verto, faveo, queror, vivo, morior, ridco, caveo, quaero, pasco, sterno.*

7. Distinguish between *aliquis, quidam, quidem : quisquis, quisque, quilibet, quisquam : quŏque, quŏque : decŏris, decŏris: viros, virus, vires : occīdo, occĭdo : scio quantum tu scis, scio quantum tu scias.*

8. Classify and ustrate the chief uses of the Latin ablative.

9. State and exemplify the various modes in Latin of expressing command and prohibition.

10. What is meant by Cognate Accusative, Historic Infinitive, Disjunctive Question, Dependent Question, Final Subjunctive, Possessive Dative, Zeugma, Hendiadys ?

11. Translate into Latin :—

(*a*) Servius, having routed a vast army of the enemy, came back to Rome.

(*b*) Caesar was informed that the fleet had already gone away.

(*c*) From this town ambassadors came to entreat him to forgive them and to spare their lives.

(*d*) He set Labienus over his fortification which he had constructed.

(*e*) They advanced eight miles and then halted for an hour.

(*f*) Caesar swore that he would return after he had conquered the Gauls.

12. Mark the quantity of the penultimate syllable in each of the following words :—*Caesaris, imperitus, confidat, repentinae, iuris, eiusmodi, arbores, discrimine.*

A. A. EXAMINATIONS.

ELEMENTARY CHEMISTRY.

THURSDAY, JUNE 3RD :—MORNING, 9 TO 10.30.

NOTE.—*Answer two questions only from each section.*

I.

1. What is the difference between a chemical compound and a mixture ? How can this difference be illustrated by means of Iron and Sulphur?

2. What is meant by combustion ? Distinguish between combustible and incombustible bodies, giving examples. Why does a stick of wood burn gradually and not all at once ?

3. What is a reducing agent ? How many grams of Water would be formed by reducing 50 grams of Cupric Oxide (CuO) with Hydrogen gas ? (Cu = 63.1).

II.

1. What is the purest water found in nature ? How may pure water be prepared in the laboratory ? Give a sketch of the necessary apparatus.

2. What do you understand by the statement that Carbon can do chemical work ?

3. How does a chemist express what takes place, (*a*) when Potassium Chlorate is heated, and (*b*) when Hydrochloric Acid is poured upon marble ?

III.

1. How is Ammonia obtained from Ammonium Chloride ? How is the gas collected ? What are its properties ?

2. What elements constitute the Chlorine and Nitrogen families ? State what you know with regard to the occurrence in nature of two of the elements in each of these families.

3. Describe the preparation of any one of the common acids, giving a sketch of the apparatus that you would employ.

A. A. EXAMINATIONS.

PHYSICS.

THURSDAY, JUNE 3RD :—MORNING, 10.30 TO 12.

1. Distinguish between physical and chemical changes in a substance. Give illustrations of each.

2. Describe the action of the ordinary lifting pump. How high may water be raised by means of it ? Why ?

3. Define specific gravity. Investigate a method for finding the specific gravity of a solid.

4. Define energy. Distinguish between *potential* and *kinetic* energy. A body weighing 25 lbs. is thrown vertically upward with an initial velocity of 30 ft. per second. Calculate its energy. Find the height to which it will rise.

5. If f denote the uniform acceleration of a body, v the initial velocity, and t the time during which the body is accelerated, prove that s the space described in the given time is given by the formula.

$$s = vt + f\frac{t^2}{2}$$

6. Distinguish between temperature and quantity of heat. Define conduction, convection and radiation of heat, giving examples of each.

7. If the melting point of a solid is 360° Centigrade, find its melting point on the Fahrenheit scale. If you use a formula, prove it.

PRELIMINARY SUBJECTS.

GEOGRAPHY.

THURSDAY, JUNE 3RD :—AFTERNOON, 2 TO 3.

(N.B.—Two questions *only* to be answered from each section).

I.

1. Draw a map of Greece.

2. Draw a map of Cuba.

3. Define : zone, meridian, pampas, steppes, tide, zenith, glacier, nadir, estuary, horizon.

II.

4. What and where are, Chimborazo, Maelstrom, Hatteras, Saragossa, Marmora?

5. Sketch roughly the course taken by a ship in sailing from Montreal to Liverpool.

6. Indicate, by sketch or otherwise, the general direction of any important mountain range *not* in Europe or Asia. Name the rivers having their sources in this range, showing the general direction in which each river flows.

III.

7. Name seven important cities in Canada, and tell where each is situated.

8. Name four bays in America,
four peninsulas in Europe, and
four capes in Asia.

9. Name ten important rivers, five in Europe and five in Asia. Give the name of one city on each river.

PRELIMINARY SUBJECTS.

NEW TESTAMENT HISTORY.

THURSDAY, JUNE 3RD :—AFTERNOON, 3 TO 4.

(*N.B.—Answer two questions from each group*).

I.

1. Give a full account of the Temptation of our Lord.

2. Write the Beatitudes.

3. Describe the Transfiguration.

II.

4. Give in outline the events that transpired between the Last Supper and the Burial of our Lord.

5. (*a*) How much time elapsed between the Resurrection and the Ascension ?

(*b*) State concisely what you know about the latter event.

6. By whom, and under what circumstances, were the following quotations spoken :—

"Behold the Lamb of God ! "
"My Kingdom is not of this world."
"Lord, lay not this sin to their charge."
"Thy money perish with thee."
"What God hath cleansed, *that* call not thou common."
"Come over into Macedonia and help us."
"Almost thou persuadest me to be a Christian."

III.

7. (*a*) How many accounts of St. Paul's conversion are given in the Acts ?
(*b*) Tell the story in your own words.

8. Relate the circumstances connected with the founding of the Church at Philippi.

9. In what connection are the following persons and places mentioned ? – Nicodemus, Simon the Cyrenian, Candace, Eutychus, Bernice, Bethabara, Bethesda, Aceldama, Mars'Hill, Miletus.

PRELIMINARY SUBJECTS.

TAYLOR'S OUTLINES MODERN HISTORY.

THURSDAY, JUNE 3RD:—AFTERNOON 3 TO 4.

Answer any three questions.

1. Under what conditions was the First Reform Bill passed. Name the grievances which it redressed, and state how they had arisen.

2. Write a brief sketch of the Indian Mutiny.

3. Discuss the causes of the Franco-German War of 1870-71. Examine the struggle from a military standpoint, and mention the terms of the peace by which it was concluded.

4. Make short but clear notes on: Roman Catholic belief; Irish Land League; Cyprus; Heligoland; Holy Alliance; Berlin Congress; Bessemer Process; Trades' Unions.

PRELIMINARY SUBJECTS.

WRITING.

THURSDAY, JUNE 3RD:—AFTERNOON, 4 TO 4.15

1. Write all the letters of the alphabet in capitals.

2. Write the numerals from 1 to 20.

3. Write the following:—

> "Go out, children, from the mine and from the city,
> Sing out, children, as the little thrushes do;
> Pluck your handfuls of the meadow cowslips pretty,
> Laugh aloud, to feel your fingers let them through."

4. Give your name in full, the name of your school, your age, and state how long you have employed the vertical style of writing, if you use it at all.

OPTIONAL SUBJECTS.

ENGLISH LITERATURE.

FRIDAY, JUNE 4TH:—MORNING, 9 TO 10.30.

(To avoid unnecessary writing of questions, use simply the numbers and letters by which the questions are indicated. Answer *all* the questions with the exception of questions 2 and 4 of which you will choose one, and of questions 8 and 9 of which you will choose one.

1. Name (*a*) the first native English poem, and (*b*) two Anglo-Saxon war-poems. (*c*) Mention a cause of the decay of Old English Literature in Northumbria. (*d*) Why is Winchester called "the cradle of English prose"?

2. Sketch the life of Spenser, giving dates.

3. Name the authors of the following works, and state the century to which each work belongs: (*a*) Il Penseroso, (*b*) The Vision of Piers the Plowman, (*c*) The Bruce, (*d*) Othello, (*e*) The Rape of the Lock, (*f*) Leviathan, (*g*) Christabel, (*h*) Manfred, (*i*) Heroes and Hero-Worship, (*j*) The Princess, (*k*) Volpone, (*l*) the Kings Quair.

4. Name two works by each of the following writers: Marlowe, *Sidney*, *Bacon*, *Shelley*, *Tennyson*, Dickens, *Swift*. Take one of the two works you have assigned to each of the authors whose names are printed in italics, and give briefly some piece of definite information about it.

5. Mention what you consider to be three leading traits of the character of Richard II., and in each case make a single reference to the play in support of your opinion.

6. What part in the play is taken by Exton, Green, the Bishop of Carlisle?

7. By what persons and at what point in the play are the following lines uttered?—

(*a*) This precious stone set in the silver sea,

(*b*) here in this place
I'll set a bank of rue, sour herb of grace.

(*c*) In London streets that coronation day,
When Bolingbroke rode on roan Barbary.

8. Give the meaning of the italicized words in the following extracts:—

(*a*) that *self* mould
(*b*) *fantastic* summer's heat
(*c*) *pelting* farm
(*d*) Razed out my *impresse*
(*e*) Till they have *fretted* us a pair of graves
(*f*) Even to the frozen ridges of the Alps
Or any other ground *inhabitable*.

Give in your own words the full meaning of

(*k*) The sly slow hours shall not determinate
The dateless limit of thy dear exile
(*l*) my tongue
Doubly portcullis'd with my teeth and lips
(*m*) like glistering Phaethon
Wanting the manage of unruly jades.

9. In the form of general statements mention the differences between Elizabethan and Modern English illustrated by

(*a*) daring-hardy
(*b*) Banish'd this frail sepulchre of our flesh
(*c*) he hath forsook the court.
(*d*) Grace me no grace, nor uncle me no uncles.

10. Mention very briefly and with precision a single striking feature in Scott's description of

(*a*) Ben-Venue
(*b*) Roderick-Dhu's barges
(*c*) The personal appearance of Malcolm Graeme
(*d*) The Goblin-cave.

11. (*a*) Sketch the combat between Fitz-James and Roderick-Dhu from the time when Roderick-Dhu's weapon is forced from his hand and (*b*) Mention, with precision, the part played by Douglas in the sports at the Castle-park.

12. In what connection is reference made to the *Brig of Turk*, *Lanrick mead*, *Coilantogle*, *Balquhidder*, Holyrood, *Cambus-Kenneth ?* (In the case of a place mentioned more than once, one reference is all you need give.) Indicate on a map or otherwise the position of the places in italics.

13. Give the meaning of bourgeon, correi, erne, linn, Fitz, stag of ten.

OPTIONAL SUBJECTS.

GEOGRAPHY.

FRIDAY, JUNE 4TH:—MORNING, 10.30 TO 12.

(N.B.—Answer six questions, namely, the two of C, two from A, and two from B).

A.

1. (*a*) Give as definitely as you can the proportion of land and water on the surface of the globe, also on the surface of the northern hemisphere and of the southern.

(*b*) What is called the "land hemisphere"? where would its centre lie? Arrange the five continental areas as regards relation of coast line to surface.

2. Explain the terms:—

(*a*) Flora; comment on this in South America.

(*b*) Plateau; name any in Asia.

(*c*) Watershed; examples from North America.

(*d*) Salt lake; names from Asia.

3. Discuss the causes of day and night, and of the seasons. Give the most important causes of the differences in climate of various places.

B.

4. Trace the outline of Australia or South America; mention: (*a*) the political divisions.

(*b*) the mountain ranges.

(*c*) five chief cities.

(*d*) four chief exports.

5. Take some group of Islands—as the Philippine Islands or the Grecian Archipelago or the Azores: What political power owns them? Describe their natural features and productions. Mention their language, religion, and the nearest continental land and country.

6. Name the States of the American Union which are wholly west of the Meridian of Chicago, and those which are wholly south of the latitude of Washington City.

C.

7. To whom do the following islands belong at present: Crete, Cyprus, Majorca, Corfu? What races would you find inhabiting these islands?

8. Describe two of the following countries as regards boundaries, area, rivers, three towns, natural products, imports and exports, form of government, chief pursuits of inhabitants, religion, race: Holland, Egypt, Nova Scotia, Paraguay, Afghanistan.

ORDINARY A. A.

BOTANY.

FRIDAY, JUNE 4TH:—AFTERNOON, 2 TO 3.30.

1. Show that the parts of the flower are modified leaves.

2. Distinguish between monoecious, dioecious and polygamous plants, and give examples of each.

3. Describe the seed of a monocotyledon.

4. What are the chief differences between exogens and endogens?

5. Give a brief account of the processes of transpiration and respiration.

6. Describe a fern and trace its development from the spore.

7. Classify and describe the accompanying specimen.

Examiners will please supply each candidate with a common wild-flower, taking pains that all parts of the plant are present.

A. A. EXAMINATIONS.

PHYSIOLOGY AND HYGIENE.

FRIDAY, JUNE 4TH:—AFTERNOON, 3.30 TO 5.

1. Briefly describe the organs of circulation, stating the functions of the blood.

2. Briefly classify food stuffs and state the organs where digestion of the different kinds takes place.

3. State the situation and function of the spinal cord. Explain the process of hearing, feeling, and smelling, and the organs concerned therewith.

4. Make notes on the following: Iris, femur, medulla, vertebra, liver, thoracic duct, sebaceous gland, kidney, radius, and shoulder joint.

5. What possible troubles are likely to follow in a house where the drainage is imperfect ? Discuss the various impurities and state their remedies.

6. Prescribe a daily routine in regard to personal cleanliness and room ventilation for the best possible hygienic conditions to exist.

7. State briefly Sylvester's artificial mode of respiration, and name the conditions where it becomes necessary.

A.A. EXAMINATIONS.

GEOMETRICAL AND FREEHAND DRAWING.

MONDAY, JUNE 7TH:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. The perpendicular distance from C to a given line A B is one inch and the perpendicular distance of D from the same line 2 inches. The distance from C to D is 2.5 inches. Draw lines from C and D meeting in A B and making equal angles with the line A B., (*a*) when C and D are on the same side of the line, (*b*) when they are on opposite sides of the line.

2. Construct a regular heptagon (7 sides) of one inch side, and find a triangle having the same area. An angle of the triangle is to coincide with an angle of the heptagon, and a side of the triangle to contain a side of the heptagon.

3. Given a circle of 2 inches diameter and a point 1 inch without the circumference of the circle. Draw a tangent to the circle through the given point, (*a*) using the centre of the circle, (*b*) without the use of the centre.

4. Draw an ellipse having major and minor axes of respectively 3 in. and 2 in., and find the tangent to the curve at a point 1 inch from an extremity of the major axis.

5. Trace a trochoidal curve (circle rolling on a straight line) generated by a point one-half inch without a rolling circle of one inch diameter.

6. Sketch freehand an example of Egyptian ornament.

7. Make a freehand drawing, slightly enlarged, of the ornament before you.

8. Make a freehand drawing of the model of a Greek Doric Capital as it appears from your point of view.

N.B.—Question 5 is not compulsory, but marks will be given for it. The first five questions cannot be answered without instruments (compasses and straight edge). Marks will not be given for the *freehand* questions 6, 7 and 8 if instruments are used in drawing them.

The capital (question 8) is to be placed at a distance of four feet from the candidate resting on a surface one foot above the eye. The plinth (which will be uppermost) is to be placed so that the vertical face to the right of the candidate makes an angle of 60° with the line joining the eye to the centre of the object.

OPTIONAL SUBJECTS.

HISTORY.

MONDAY, JUNE 7TH:—AFTERNOON, 2 TO 3.30.

Greek History.

1. (*a*) Give the causes, incidents, and results of the expedition sent by Darius against Greece.

(*b*) How did Alexander of Macedon in the name of Greece retaliate upon the Persians?

2. Make brief but precise notes on: helot; Delos; Leuctra; Aristides; ostracism.

Roman History.

3. Indicate distinctly the steps by which Rome gained possession of all Italy and Sicily.

4. Name ten separate and important events in the struggle between Rome and Carthage, with the dates of each.

5. Make brief but precise notes on: Cato the Censor; Marius; the war with Jugurtha; the defeat of Varus; Rome and Persia.

Collier's "Great Events."

6. Write on:—

(*a*) Germanic invasions of Italy in the 5th and 6th centuries.

(*b*) The Albigenses.

(*c*) Peter the Great and Charles XII.

7. Make brief but precise notes on: Belisarius; the Caliph Omar; Ragnar Lodbrok; Guelfs and Ghibellines; Luther's disputation at Leipsic; the Council of Trent; the battle of Ivry; La Hogue; Marat; Wagram.

OPTIONAL SUBJECTS.

ENGLISH LANGUAGE.

MONDAY, JUNE 7TH :—3.30 TO 5.30 P.M.

1. (*a*) Mention three functions of the suffix *en*; give an illustration of each. (*b*) What is the meaning of the suffix *oon*? give an illustration. (*c*) What is the origin of *she, a, second*? (*d*) When is the final consonant doubled in the comparison of adjectives? Give an instance. (*e*) Write a short complex sentence in which a *qualitative adjective* takes a plural form.

2. (*a*) Give an illustration of the gerundial infinitive attached (*α*) to a noun, (*β*) to an adjective. (*b*) Give the causative verbs derived from fall, quoth, rise, sit. (*c*) Write the third person singular of the following tenses of the verb *strike* in the active voice: future perfect continuous indicative; present perfect subjunctive. (*d*) Name two verbs that take two direct objects, and give an illustration of each. (*e*) Use the adjective *ripe* predicatively and attributively. (*f*) After the following words write the preposition each takes: *acquit, accord, dependent, exception.*

3. (*a*) Give the origin of *canter, laconic, solecism.* (*b*) Explain the forms *gadfly, proxy, sexton.* (*c*) Name two ways of producing emphasis, and give an illustration of each. (*d*) Explain and illustrate metonymy and metaphor.

4. (*a*) Name the family, group and branch to which English belongs. (*b*) What European dialect most closely resembles English? (*c*) What single leading fact in the development of English is illustrated by two such pairs of words as *book-hoard, library; rime-craft; arithmetic*? (*d*) Name the three leading Early English dialects and give the first person plural of the present indicative of each. (*e*) Refer the following words to the Latin periods to which they belong: *homage, port, chester.*

5. What general statement does each of the following words illustrate, and how?

(*a*) Hildebrand.
(*b*) Irenæus.
(*c*) Trinacria.
(*d*) long pig.
(*e*) beef.

6. Use in illustration (*a*) of etymologies at random the words *formica, apis, crypt*; (*b*) of the quickness with which words let go the secret of their origin, the names *Lollards* and *Waldenses*. (*c*) Derive damask, parchment, majolica, magnet. (*d*) On what ground does Trench think the practice of the Quakers in naming the days of the week the "first day," "second day," etc., absurd?

7. (*a*) What is meant by assimilation and dissimilation? Give an illustration of each? (*b*) When was the word dragonnade coined? What does it mean? (*c*) Write two words given by Trench as arising at the time of the French Revolution. (*d*) Distinguish between *felicitate* and *congratulate; invention* and *discovery; opposite* and *contrary*. (*e*) What are homonyms? Give, with derivation, two examples.

A. A. EXAMINATIONS.

ARITHMETIC (OPTIONAL).

TUESDAY, JUNE 8TH:—MORNING, 9 TO 10.30.

Answer two questions only from each Section.

SECTION I.

1. The exact length of the year is 365 days, 5 hours, 48 min. and 49.7 sec. Find the error in 120 centuries in computing time as we do at present.

2. A druggist buys opium at $4.80 per lb. Troy, and sells it by Avoirdupois weight. How much must he charge per oz. in order to gain 17½ per cent. on the transaction?

3. (*a*) Find to three places of decimals the width or thickness of the largest square timber that can be cut from a log which is six feet in diameter.

(*b*) How many square feet are there in the surface of a cube whose volume is 354,894,912 cubic inches?

SECTION II.

4. What will it cost at 48 cents per sq. yd., to make a cinder path around the outside of a circular plot which is 84 feet in diameter, and two paths at right angles to each other through its centre ; the paths being 6 ft. in width ?

5. A merchant sends wheat to his agent with instructions to sell it and invest the proceeds in cotton goods. The agent does this and charges 3 per cent. commission for selling and 2 per cent. for buying. His total commission is $4.80. How much does he invest in cottons ?

6. Find the area and the weight of a spherical shell of bronze 12 feet in diameter, the thickness of the shell being 2 inches ? Given that one cubic inch of bronze weighs five oz.

SECTION III.

7. A person invested $11,532 cash in 3½ per cent. stock at 93; he sold $9,000 stock when it had risen to 97½, and the remainder when it had fallen to 88. How much did he gain or lose by the transaction ?

If he invest the proceeds in M. Bank stock, which pays a dividend of 8 per cent., at 189, what is the difference in his income ?

8. With the aid of Logarithms:—

(*a*) Multiply 231.4 by 49657 and the result by .0625.

9. With the aid of Logarithms :—

(*a*) Divide 49.36 by 3984.27, and multiply the result by 564.21.

(*b*) Find the ninth power of $39\frac{1}{5}$.

(*b*) Extract the cube root of 7.121, and the seventh root of 10001.

ADVANCED A. A.

ADVANCED A. A.

A. A. EXAMINATIONS.

ALGEBRA (*Advanced A.A.*).

MONDAY, MAY 31ST:—MORNING, 9 TO 12.

1. Find the values of

(*a*) $\dfrac{2(7x-4)}{6x^2-7x+2} + \dfrac{x-10}{6x^2-x-2} - \dfrac{2(4x-1)}{4x^2-1}$

(*b*) $\left\{\dfrac{1+x}{1-x} + \dfrac{4x}{1+x^2} + \dfrac{8x}{1+x^4} - \dfrac{1-x}{1+x}\right\}$

$\div \left\{\dfrac{1+x^2}{1-x^2} + \dfrac{4x^2}{1+x^4} - \dfrac{1-x^2}{1+x^2}\right\}$

2. Extract the square root of

$$\frac{4x^2}{y} + \frac{\sqrt{x^3}}{y^{-\frac{1}{2}}} - 2x + \frac{y}{4} + x^3 - 4\sqrt{x^5 y^{-1}},$$

and the cube root of

$27 + 108x + 90x^2 - 80x^3 - 60x^4 + 48x^5 - 8x^6$.

3. Find the values of

(*a*) $\dfrac{\sqrt{45x^3} - \sqrt{80x^3} + \sqrt{5a^2 x}}{a-x}$

(*b*) $\left\{\dfrac{x^{\frac{1}{2}} + x^{-\frac{1}{2}}}{x-x+1} - \dfrac{x^{\frac{1}{2}} - x^{-\frac{1}{2}}}{x^2+x+1}\right\} \div \left\{\dfrac{x^{\frac{1}{2}} + 2x^{-\frac{1}{2}}}{x^3-1} - \dfrac{x^{\frac{1}{2}} - 2x^{-\frac{1}{2}}}{x^3+1}\right\}$

(*c*) $\dfrac{\sqrt{x^2+1} + \sqrt{x^2-1}}{\sqrt{x^2+1} - \sqrt{x^2-1}} + \dfrac{\sqrt{x^2+1} - \sqrt{x^2-1}}{\sqrt{x^2+1} + \sqrt{x^2-1}}$

4. Solve the equations :—

(*a*) $\dfrac{x-4a}{x-3a} + \dfrac{x-5a}{x-4a} = \dfrac{x+6a}{x-4a} + \dfrac{x+5a}{x-3a}$

(*b*) $b^2 x^2 - c^2 x^2 + acx - a^2 x + a^3 - a^2 b = 0$.

(*c*) $\dfrac{5}{6 - \dfrac{5}{6 - \dfrac{5}{6-x}}} = x$.

(*d*) $(x^2 - 5x + 2)^2 = x^2 - 5x + 22$.

5. A boat's crew can row 8 miles an hour in still water; what is the speed of a river's current if it take them two hours and 40 minutes to row 8 miles up and 8 miles down?

6. A person having 7 miles to walk increases his speed one mile an hour after the first mile, and finds that he is half an hour less on the road than he would have been had he not altered his rate. How long did he take?

7. Define Arithmetical, Geometrical and Harmonical Progression.

(*a*) Find the Arithmetical, Geometrical and Harmonical means between $2\frac{1}{2}$ and $4\frac{4}{9}$.

8. A and B start from the same point, B five days after A; A travels 1 mile the first day, 2 miles the second, 3 miles the third, and so on; B travels 12 miles a day. When will they be together? Explain the double answer.

A. A. (SUPÉRIEUR).

LUNDI, 31 MAI :—DE 2 À 5.

I.

(*a*) Remplacer par des pronoms les membres de phrase en italique:

Monsieur Jourdain faisait de la prose sans savoir *qu'il faisait de la prose.*

Thémistocle voulait détruire la flotte lacédémonienne, mais Aristide s'opposa à *ce que Thémistocle détruisît la flotte lacédémonienne.*

Corrigeons nous tandis que nous pouvons *nous corriger*

Pierre renia son maître et se repentit *d'avoir renié son maître.*

Dieu combla Salomon de bienfaits; *Dieu* donna à *Salomon* la sagesse et la richesse.

(*b*) Mettre les verbes actifs à la forme passive :—

Kléber battit les Turcs à Héliopolis.

On méprise partout les traîtres.

Archimède défendit la ville de Syracuse.

Mettre les verbes passifs à la forme active.

Le palais du Luxembourg fut bâti par Jacques Debrosse.

Une partie de la semence qui est confiée par le laboureur à la terre est inévitablement dévorée par les insectes et les oiseaux.

Une grande importance est donnée aux Antilles par leur position aussi bien que par leurs productions.

(*c*) Copier le passage suivant en remplaçant les infinitifs par les formes que le sens exige :—

Vers la fin du règne de Charlemagne, de nouveaux barbares appelés Normands, c'est-à-dire hommes du Nord, (*débarquer*) sur les côtes de France et (*piller*) toute la région.

Ces barbares (*habiter*) la Suède et la Norvège.

Tous les ans, ils (*partir*) sur leurs barques légères et (*venir*) ainsi saccager les côtes de France.

Conduits par des chefs audacieux, ils ne (*craindre*) pas de remonter le cours des fleuves. Ils (*piller*) ou (*rançonner*) les villes.

(*d*) Dans le passage suivant remplacer les tirets par des verbes convenant au sens :—

Dans une campagne que les troupes françaises — en Flandre, un capitaine de cavalerie — l'ordre d'aller au fourrage avec sa compagnie. Il — de loin une cabane; il y — ses pas et — à la porte. Un vieillard —. "Brave homme, — le capitaine, montrez-moi, je vous —, un champ où je — faire fourrager mes cavaliers."

"Volontiers," — le vieillard.

Aussitôt le bonhomme se — en tête du détachement et — avec lui le vallon. Après un quart d'heure de marche ils — un beau champ d'orge.

"Voilà ce qu'il nous —," — le capitaine.

"Attendez un peu, — le paysan, et vous — content." On — de marcher, et un quart de lieue plus loin on — un autre champ d'orge où le paysan — les cavaliers à descendre.

La troupe — pied à terre, — le grain, le — en trousse et — à cheval.

L'officier — alors à son guide: "Mon brave, vous nous — faire une course inutile ; le premier champ — bien celui-ci." "Cela — vrai," — le vieillard, "mais il — pas à moi."

(*e*) Faire un résumé d'environ 300 mots du Bourgeois Gentilhomme.

N.B.—Les Candidats sont priés de répondre en français exclusivement, et de vouloir bien se servir d'un cahier séparé pour chaque chapitre.

II.

Traduire en anglais un des passages suivants :

(*a*) Nous passions à Orléans, mon capitaine et moi. Il n'était bruit, dans la ville, que d'une aventure récemment arrivée à un citoyen, appelé M. le Pelletier, homme pénétré d'une si profonde commisération pour les malheureux, qu'après avoir réduit, par des aumônes démesurées, une fortune assez considérable au plus étroit nécessaire, il allait de porte en porte, chercher, dans la bourse d'autrui, des secours qu'il n'était plus en état de trouver dans la sienne. Presque tous les riches, sans exception, le regardaient comme une espèce de fou ; et peu s'en fallut que ses proches ne le fissent interdire comme dissipateur. Tandis que nous nous rafraîchissions dans une auberge, une foule d'oisifs s'était rassemblée autour d'une espèce d'orateur, le barbier de la rue, et lui disait : "Vous y étiez, vous; racontez-nous comment la chose s'est passée.—Très-volontiers," répondit l'orateur du coin, qui ne demandait pas mieux que de pérorer. "M. Aubertot, une de mes pratiques, dont la maison fait face à l'église des Capucins, était sur sa porte. M. le Pelletier l'aborde et lui dit:

Monsieur Aubertot, ne me donnerez-vous rien pour mes amis? car c'est ainsi qu'il appelle les pauvres, comme vous savez.

(*b*) Je logeais dans une auberge à Colmar. Un jour, me trouvant à la table d'hôte, où l'égalité amenait de même les puissants du jour, j'y vois arriver un représentant du peuple dont le nom m'est échappé. Le maître de la maison faisait les honneurs. Le représentant, à qui l'on présente du pain, se lève et s'écrie: "Comment, citoyen hôte, tu nous fais servir du pain blanc ici, tandis qu'à Paris et dans tous les départements que je parcours, on ne mange que du pain bis! Je ne souffrirai pas que, dans ce département, on se distingue d'une manière aussi choquante pour tous les autres; je te préviens, citoyen, que demain, je donne à dîner chez toi à toutes les autorités de la ville, et je prétends que tu ne nous serves que du pain bis.

L'hôte, déconcerté, n'ouvrait pas la bouche, et tremblait d'autant plus d'attirer sur lui l'attention des autorités qu'il avait deux fils émigrés. Ce brave homme, dont j'étais depuis quelque temps le commensal, vint me confier sa peine et son embarras. "Allons, allons, lui dis-je, je vais vous tirer d'affaire, moi. Avez-vous de la farine? — Oui, mais je n'en ai que de très blanche, et d'ici à demain, je n'ai pas le temps de moudre d'autre grain. — Avez-vous encore du pain de cuit? — Oui, j'ai la provision de la semaine. — Il suffit. Que votre femme et vos filles se réunissent à moi; je vous réponds que demain, avant de dîner, nous aurons converti votre farine blanche en pain bis.

Traduire en français un des passages suivants:

(*a*) The fruit season will soon begin. It would perhaps be more correct to say that the fruit trade will soon revive, for there is not a month in the whole year in which fruit can not be obtained here. Montreal has come to be one of the best fruit markets on the Continent. We receive immense quantities of fruit from Spain and Southern Europe. It is not an unfrequent thing for American buyers to come over to our great fruit sales.

(*b*) Why have you given up your painting? I think it is a pity to abandon an art to which one has devoted some of the best years of one's life. By the way, one of the best French artists is here on a visit to his nephew. He has stated his intention of taking a few pupils. This is an opportunity which will not soon be repeated, and I should strongly advise to avail yourself of it. I have heard that he is much interested in A. B. A. B. may consider himself lucky, for the friendly offices of a man of reputation will make things much pleasanter for him in Paris.

TRIGONOMETRY.

ADVANCED A. A.

TUESDAY, JUNE 1ST :—MORNING, 9 TO 12.

1. Trace the changes in the following from 0 to 180°.
   (*a*) sin A.
   (*b*) cos *A*.
   (*c*) sin *A* + cos *A*.
   (*d*) sin *A* — cos *A*.
   (*e*) tan *A* — sec *A*.

2. Taking two right angles as a unit, what number will represent 1 degree, 1 grade, 1 circular unit or radian respectively ?

3. Find from a figure sin $(A + B)$, cos $(A - B)$ and tan $(A + B)$.

4. Prove that $\sin \frac{A}{2} = \sqrt{\frac{1 - \cos A}{2}}$;

   hence find sin 15°.

5. Prove that
   (*a*) $\sec^2 A - \tan^2 A = 1$.
   (*b*) $\sec^2 A \operatorname{cosec}^2 A = \sec^2 A + \operatorname{cosec}^2 A$.
   (*c*) $\frac{\sin 5\theta + \sin 3\theta}{\cos 3\theta - \cos 5\theta} = \cot \theta$.

6. (*a*) Define the logarithm of a number to a given base.
   (*b*) Divide 4.53627188 by 9.
   (*c*) Given $\frac{4^x}{2^{x+y}} = 8$ and $x = 3y$.

find x and y.

7. In any triangle prove
   (*a*) $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = 2R$.
   (*b*) $a = b \cos C + c \cos B$.
   (*c*) $\sin \frac{A}{2} = \sqrt{\frac{(s-b)(s-c)}{bc}}$ where $2s = a + b + c$
   (*d*) area $= \sqrt{s(s-a)(s-b)(s-c)}$.
   (*e*) $\tan \frac{A-B}{2} = \frac{a-b}{a+b} \cot \frac{C}{2}$.

GEOMETRY.

(ADVANCED A.A.) AND MATRICULATION ON APPLIED SCIENCE.

TUESDAY, JUNE 1ST:—AFTERNOON, 2 TO 5.

1. If a side of a triangle be produced, then the exterior angle shall be equal to the sum of the two interior opposite angles; also the three interior angles of a triangle are together equal to two right angles.

(*a*) Trisect a right angle.

2. If two triangles have two angles of the one equal to two angles of the other, each to each, and a side of one equal to a side of the other, these sides being opposite to equal angles in each, prove that the triangles are equal in all respects by the method of *superposition*.

Prove that parallelograms on the same base and between the same parallels are equal in area.

3. If a straight line is divided equally and also unequally, the sum of the squares on the two unequal parts is twice the sum of the squares on half the line and on the line between the points of section.

4. The opposite angles of any quadrilateral inscribed in a circle are together equal to two right angles.

(*a*) Prove the converse of the above theorem, viz: If a pair of opposite angles of a quadrilateral are together equal to two right angles its vertices lie on the circle.

5. If from any point without a circle a tangent and a line cutting the circle be drawn, then the rectangle contained by the whole secant and the part of it without the circle shall be equal to the square on the tangent.

6. To describe an isosceles triangle having each of the angles at the base double of the third angle.

(*a*) Point out in the figure used in the foregoing problem an isosceles triangle whose vertical angle is three times either of the angles at the base, proving what you say; show how to inscribe a pentagon in the smaller circle at your figure, using as a basis the construction and proof of IV 10.

7. If two angles be equiangular to one another, the sides about the equal angles shall be proportionals, those sides which are opposite to equal angles being homologous.

8. (*a*) Similar triangles are to one another in the duplicate ratio of their homologous sides.

(*b*) From a given triangle to cut off one-ninth of its area.

9. Shew how to make a rectilineal figure similar to one rectilineal figure and equal to another.

N.B.—Ordinary symbols and abbreviations may be used excepting algebraic symbols.

ADVANCED OPTIONAL SUBJECTS.

LATIN.

I. Grammar and Composition

1. (*a*) Decline *unus*, *quisquam*, *senex*, *domus* (marking all *long* vowels by the usual sign). (*b*) Compare *brevis*, *malevolus*, *digne*. (*c*) Define the terms *root*, *stem*, *termination*. (*d*) What are the uncontracted forms of *debeo*, *rursus*, *surgo*, *cunctus*?

2. (*a*) Inflect the present indicative and imperfect subjunctive of *edo* I eat); and the present indicative and imperative of *nolo*. (*b*) In what ways may the Latin future infinitive passive be formed? (*c*) What is the origin of *d* in *redeo* and *prodest*, and *p* in *sumpsi*? (*d*) What construction do the following words take: *dignus*, *potior*, *paenitet*, *peritus*, *procul*?

3. Translate and comment on: (*a*) Mithridates annum iam tertium et vicesimum regnat. (*b*) Excusatum habeas me rogo, ceno domi. (*c*) Spero fore ut contingat id nobis. (*d*) Jugurtha Thalam pervenit in oppidum magnum et opulentum. (*e*) Nihil me adiuvit cum posset.

4. (*a*) Write the quantity of every vowel in the following words: *bene*, *post*, *hodie*, *nobis*, *populus* (people), *quomodo*. (*b*) Define: *syncope*, *synizesis*, *deaeresis*, *catalectic*. (*c*) State the rule for turning Roman dates into English. Give the equivalent English dates for: d. d. VIII. Id. I an.; 648 a. u. c. (*d*) Correct all errors in the following: (1) urbs parcenda est. (2) In Rhodo ego non fui. (3) Amicus est tanquam alius idem.

5. Translate into Latin:

This officer started with one legion, and after he had advanced about ten miles from the camp, learned from scouts that the prince had taken up his position on a hill seven miles away. They reported that the ascent to the hill was easy, if a sudden attack were made from all sides at once. Labienus at first drew up his troops in order of battle, and began to lead them to the foot of the hill. But as he had received strict orders from Caesar to avoid an engagement unless his forces were discovered by the enemy, he changed his design; and, apprised by fugitives that the prince had only provisions remaining for two days, he resolved to cut off his supplies.

II.

VIRGIL AND CICERO.

A. VIRGIL, AENEID, Bk. I.

1. Translate: Virgil, Aeneid I., 643-656.

Aeneas (neque enim patrius consistere mentem
passus amor) rapidum ad naves praemittit Achaten,
Ascanio ferat haec, ipsumque ad moenia ducat.
Omnis in Ascanio cari stat cura parentis.
Munera praeterea, Iliacis, erepta ruinis,
ferre iubet, pallam signis auroque rigentem,
et circumtextum croceo velamen acantho,
ornatus Argivae Helenae, quos ila Mycenis
Pergama quum peteret inconcessosque Hymenaeos
extulerat, matris Ledae mirabile donum:
praeterea sceptrum, Ilione quod gesserat olim,
maxima natarum Priami, colloque monile
baccatum, et duplicem gemmis auroque coronam.
Haec celerans iter ad naves tendebat Achates.

Scan the first three lines.

Parse fully *passus, moenia, munera, peteret, extulerat, iter.*

B. CICERO, IN CATILINAM I. AND II.

2. Translate:

(*a*) At si hoc idem huic adulescenti optimo P. Sestio, si fortissimo viro M. Marcello *dixissem,* iam mihi consuli, hoc ipso in templo, senatus iure optimo vim et manus intulisset. De te autem, Catilina, cum quiescunt, probant, cum patiuntur, decernunt: cum tacent, clamant. Neque hi solum —quorum tibi auctoritas est videlicet cara, vita vilissima,—sed etiam illi equites Romani, honestissimi atque optimi viri, ceterique fortissimi cives qui circumstant senatum, quorum tu et frequentiam videre et studia perspicere et voces paulo ante exaudire potuisti. Quorum ego vix dbs te iam diu manus actela contineo, eosdem facile adducam, ut te haec, quae vastare iam pridem studes, reliquentem usque ad portas *prosequantur.*

(*b*) Ac si quis est talis, *qualis* esse *omnis* oportebat, qui in hoc ipso, in quo exsultat et triumphat oratio mea, me vehementer *accuset,* quod tam capitalem hostem non *comprehenderim* potius quam emiserim, non est ista mea culpa sed temporum. Interfectum esse L. Catilinam et gravissimo supplicio adfectum iam pridem oportebat, idque a me et mos maiorum et huius imperi severitas et res publica postulabat. Sed quam multos fuisse putatis qui quae ego *deferrem* non crederent?

(*c*) Quod exspectavi, iam sum adsecutus, ut vos omnes factam esse

aperte coniurationem contra rem publicam videretis: nisi vero si quis est qui *Catilinae* similis cum Catilina sentire non putet. Non est iam lenitati locus: severitatem res ipsa flagitat. Unum etiam nunc concedam: exeant, proficiscantur; ne *patiantur* desiderio sui Catilinam miserum tabescere. Demonstrabo iter; Aurelia *via* profectus est; si ad celerare volent, ad vesperam consequentur.

Account for the grammatical construction of *italicized* words.

C. Translation at sight.

(*a*) Caesar, omni exercitu ad utramque partem munitionum dispositio, ut, si usus veniat, suum quisque locum teneat et noverit, equitatum ex castris educi et proelium committi iubet. Erat ex omnibus castris, quae summum undique iugum tenebant, despectus, atque omnes milites intenti pugnae proventum exspectabant. Galli inter equites raros sagittarios expeditosque levis armaturae interiecerant, qui suis cedentibus auxilio succurrerent, et nostrorum equitum impetus sustinerent. Ab his complures, de improviso vulnerati, proelio excedebant. Cum suos pugna superiores esse Galli confiderent, et nostros multitudine premi viderent, ex omnibus partibus, et ii qui munitionibus continebantur, et hi qui ad auxilium convenerant clamore et ululatu suorum animos confirmabant. Quod in conspectu omnium res gerebatur, neque recte ac turpiter factum celari poterat; utrosque et laudis cupiditas et timor ignominiae ad virtutem excitabant. Cum a meridie prope ad solis occasum dubia victoria pugnaretur, Germani una in parte confertis turmis in hostes impetum fecerunt, eosque propulerunt. Quibus in fugam coniectis, sagittarii circumventi interfectique sunt.

(*b*) Extemplo socios primumque arcessit Acesten,
et Iovis imperium et cari praecepta parentis
edocet, et quae nunc animo sententia constet.
Haud mora consiliis, nec iussa recusat Acestes.
Transcribunt urbi matres, populumque volentem
deponunt, animos nil magnae laudis egentes.
Ipsi transtra novant, flammmisque ambesa reponunt
robora navigiis, aptant remosque rudentesque,
exigui numero, sed bello vivida virtus.
Interea Aeneas urbem designat aratro
sortitur que domos; hoc Ilium et haecloca Troiam
esse iubet. Gaudet regno Troianus Acestes,
indicitque forum et patribus dat iura vocatis.
Tum vicina astris, Erycino in vertice sedes
fundatur Veneri Idaliae, tumuloque sacerdos
ac lucus late sacer additur Anchises.

ADVANCED A. A. EXAMINATION.

GREEK.

WEDNESDAY, JUNE 2ND :—AFTERNOON, 2 TO 5.

N.B.—Candidates are requested to send in their answers to A separate from those to B and C.

A. XENOPHON, ANABASIS, I AND II.

Translate with notes on words and phrases underlined :—

1. ἐκάλεσε δὲ καὶ τοὺς Μίλητον πολιοκοῦντας, καὶ τοὺς φυγάδας ἐκελευσε σὺν αὐτῷ στρατεύεσθαι, ὑποσχόμενος αὐτοῖς, εἰ καλῶς καταπράξειαν ἐφ' ἃ ἐστρατευετο, μὴ πρόσθεν παύσεσθαι πρὶν αὐτοὺς καταγάγοι οἰκάδε.

2. ἐγὼ γὰρ ὀκνοίην μὲν ἂν εἰς τὰ πλοῖα ἐμβαίνειν ἃ ἡμῖν δοίη, μὴ ἡμᾶς ταῖς τριήρεσι καταδύσῃ, φοβοίμην δ' ἂν τῷ ἡγεμόνι ᾧ δοίη ἕπεσθαι, μὴ ἡμᾶς ἀγάγῃ ὅθεν οὐκ ἔσται ἐξελθεῖν· βουλοίμην δ' ἂν ἄκοντος ἀπιὼν Κύρου λαθεῖν αὐτὸν ἀπελθών· ὃ οὐ δυνατόν ἐστιν.

3. πάλιν δὲ ὁ Κῦρος ἠρώτα, Οὐκοῦν ὕστερον, ὡς αὐτὸς σὺ ὁμολογεῖς, οὐδὲν ὑπ' ἐμοῦ ἀδικούμενος, ἀποστὰς εἰς Μυσοὺς κακῶς ἐποίεις τὴν ἐμὴν χώραν ὅ, τι ἐδύνω : ἔφη ὁ Ὀρόντας.

4. καὶ γὰρ ἔργῳ ἐπεδείκνυτο καὶ ἔλεγεν ὅτι οὐκ ἂν ποτε προσοῖτο, ἐπεὶ ἅπαξ φίλος αὐτοῖς ἐγένετο, οὐδ' εἰ ἔτι μὲν μείους γένοιντο, ἔτι δὲ κάκιον πράξειαν.

5. ὧδε οὖν χρὴ ποιεῖν· ἀπιόντας δειπνεῖν ὅ, τι τίς ἔχει· ἐπειδὰν δὲ σημήνῃ τῷ κέρατι ὡς ἀναπαύεσθαι, συσκευάζεσθε. ἐπειδὰν δὲ τὸ δεύτερον, ἀνατίθεσθε ἐπὶ τὰ ὑποζύγια· ἐπὶ δὲ τῷ τρίτῳ ἕπεσθε τῷ ἡγουμένῳ, τὰ μὲν ὑποζύγια ἔχοντες πρὸς τοῦ ποταμοῦ, τὰ δὲ ὅπλα ἔξω.

6. τέλος δὲ εἶπε, Καὶ νῦν ἔξεστιν ὑμῖν πιστὰ λαβεῖν παρ' ἡμῶν ἢ μὴν φιλίαν παρέξειν ὑμῖν τὴν χώραν καὶ ἀδόλως ἀπάξειν εἰς τὴν Ἑλλάδα ἀγορὰν παρέχοντας· ὅπου δ' ἂν μὴ ᾖ πρίασθαι, λαμβάνειν ὑμᾶς ἐκ τῆς χώρας ἐάσομεν τὰ ἐπιτήδεια.

7. καὶ γὰρ οἶδα ἀνθρώπους ἤδη τοὺς μὲν ἐκδιαβολῆς τοὺς δὲ καὶ ἐξ ὑποψίας οἵ φοβηθέντες ἀλλήλους φθάσαι βουλόμενοι πρὶν παθεῖν ἐποίησαν ἀνήκεστα κακὰ τοὺς οὔτε μέλλοντας οὔτ' ἂν βουλομένους τοιοῦτον οὐδέν.

8. ταῦτα οὖν φιλοπολέμου μοι δοκεῖ ἀνδρὸς ἔργα εἶναι, ὅστις ἐξὸν μὲν εἰρήνην ἔχειν ἄνευ αἰσχύνης καὶ βλάβης αἱρεῖται πολεμεῖν, ἐξὸν δὲ ῥᾳθυμεῖν βούλεται πονεῖν ὥστε πολεμεῖν.

9. Draw a map indicating the route taken by the 10,000 as described in these books.

B. HOMER, ILIAD, IV, AND ODYSSEY, VII.

1. Translate :—

βὰν δ' ἰέναι καθ' ὅμιλον ἀνὰ στρατὸν εὐρὺν Ἀχαιῶν.
ἀλλ' ὅτε δή ῥ' ἵκανον ὅθι ξανθὸς Μενελαος
βλήμενος ἦν, περὶ δ' αὐτὸν ἀγηγέραθ' ὅσσοι ἄριστοι
κυκλόσ', ὁ δ' ἐν μέσσοισι παρίστατο ἰσόθεος φώς,
αὐτίκα δ' ἐκ ζωστῆρος ἀρηρότος ἕλκεν ὀιστόν
τοῦ δ' ἐξελκομένοιο πάλιν ἄγεν ὀξέες ὄγκοι.

Explain infinitive ἰέναι, form κυκλόσε, genitive τοῦ ἐξελκομένοιο. Is there any trace of the digamma in this passage? Parse fully words underlined.

2. Translate :

Τρῶες δ', ὥς τ' ὄιες πολυπάμονος ἀνδρὸς ἐν αὐλῇ
μυρίαι ἑστήκασιν ἀμελγόμεναι γάλα λευκόν,

ἀζηχὲς μεμακνῖαι ἀκούουσαι ὅπα ἀρνῶν,
ὣς Τρώων ἀλαλητὸς ἀνὰ στρατὸν εὐρὺν ὀρώρει
οὐ γὰρ πάντων ἦεν ὁμὸς θρόος οὐδ' ἴα γῆρυς,
ἀλλὰ γλῶσσ' ἐμέμικτο, πολύκλητοι δ' ἔσαν ἄνδρες

Write a note on the Homeric use of the simile. Distinguish between ὡς and ὣς, ἄλλα and ἀλλὰ, μύριαι and μυρίαι. Explain accusative γάλα What grammatical figure is exemplified by Τρῶες...Τρώων ?

3. Translate :—

πεντήκοντα δέ οἱ δμωαὶ κατὰ δῶμα γυναῖκες
αἱ μὲν ἀλετρεύουσι μύλης ἔπι μήλοπα καρπόν,
αἱ δ' ἱστοὺς ὑφόωσιὶ κα ἠλάκατα στρωφῶσιν
ἥμεναι, οἷά τε φύλλα μακεδνῆς αἰγείροιο·
καιροσέων δ' ὀθονέων ἀπολείβεται ὑγρὸν ἔλαιον.

Parse fully words underlined. Account for accent of ἔπι. Explain the simile, and the exact meaning of the last line. Give the derivation of καιροσέων. Scan the last two lines.

4. Translate :—

αἴ γὰρ, Ζεῦ τε πάτερ καὶ Ἀθηναίη καὶ Ἄπολλον,
τοῖος ἐὼν οἷός ἐσσι, τά τε φρονέων ἅ τ' ἐγώ περ,
παῖδά τ' ἐμὴν ἐχέμεν καὶ ἐμὸς γαμβρὸς καλέεσθαι
αὖθι μένων· οἶκον δέ τ' ἐγὼ καὶ κτήματα δοίην,
εἴ κ' ἐθέλων γε μένοις· ἀέκοντα σ' οὔ τις ἐρύξει
Φαιήκων· μὴ τοῦτο φίλον Διὶ πατρὶ γένοιτο.

Who is speaking and who is addresed in this passage ? Explain the mood of ἐχέμεν. How would the sense be altered by reading κε for τε in line 4 ?

5. Explain and exemplify the Homeric uses of the article.

C.

1. Write down acc. sing. and dat. plur. of Greek words signifying "ear," "tooth," "ox," "steward," "giant," "many," "knowing" (pf. partic.)

2. Give the Greek words for 15, 239, 8th, 6 times.

3. Give gen. and dat. sing. of εἷς, ὅστις (both forms), εὐσεβής; also acc. and dat. plur. of λύσας, ἡδίων, υἱός.

4. Write out in full the Attic forms of the pres. imperat. act. of ποιέω, the aorist indic. act. of ἀφίημι, the pres. opt. act. of νικάω.

5. Write out in full imperf. ind. of εἶμι (ibo.)
and pres. ind. of φημί.

6. Give the 3rd plur. of the fut. ind., the 1st plur. of the aor. ind., the 2nd sing. of the perf. ind. of πλέω, δίδωμι, ἀποκτείνω, βαίνω, κρίνω, ἐλαύνω, διδάσκω.

7. How did the Greeks express, (*a*) agency, (*b*) motion towards *persons*, (*c*) by (in oaths), (*d*) time within which? Give examples of each usage.

8. (*a*) With what moods is ὥστε used and with what difference of meaning? (*b*) Give the various meanings and constructions of ὡς.

9. Explain and exemplify the uses of μὴ οὐ and οὐ μή.

10. Translate into Greek:—(*a*) The boy has large feet; (*b*) He went away unnoticed; (*c*) Some thought one thing; some another; (*d*) He said that he, not Cyrus was king; (*e*) If I had had anything, I would have given it; (*f*) I am sure that I did this; (*g*) He happened to be his guest friend; (*h*) The king himself had the same horse.

ADVANCED EXAMINATION.

ENGLISH LANGUAGE.

THURSDAY, JUNE 3RD:—9 TO 12 A.M.

(Answer the first *six* questions of group A and any two of the remainder. Groups B and C are imperative.)

A 1. (*a*) Name the oldest Teutonic tongue and its chief literary monument. (*b*) Arrange the following in the Teutonic groups to which they belong: Frisian, Frankish, Swabian. (*c*) Assign the following to the branches to which they belong: Cymric, Provençal, Russian.

2. (*a*) Make a note on the dual in Moeso-Gothic and in Anglo-Saxon.

(*b*) How was the passive formed in Anglo-Saxon?

(*c*) Show that gender in Anglo-Saxon was not rational as now.

(*d*) What words and phrases were used as relative pronouns in Anglo-Saxon?

(*e*) What was the ending of the dative plural in Anglo-Saxon? Show that traces of it still exist.

(*f*) State precisely what is meant by a præterito-præsentia verb Give three examples.

3. Treat the following historically:

(*a*) The reflexive pronoun.

(*b*) The Second Personal pronoun.

4. Explain with precision the forms *elder; lice; geese; teeth; sheep* (pl.); *glitterand*. What is the origin of the final *e* in *stone?*

5. Write on the differences between the three early English dialects.

6. Write on (*a*) Reduplication. (*b*) Ablaut and its various forms in Anglo-Saxon verbs.

7. Contrast the tenses and inflexions of an Anglo-Saxon strong verb with those of a modern English one.

8. The modern English Indefinite and Distributive Pronouns: Mention them, give their derivation and their use.

9. How is the Adverbial Relation expressed in modern English? Give examples.

B. Analyse:

(*a*) I can easier teach twenty what were good to be done than be one of the twenty to follow mine own teaching.

(*b*) These few precepts in thy memory see thou character.

C. Write an essay on one of the following subjects:

(*a*) Philology.

(*b*) Oratory.

(*c*) Pastimes.

ADVANCED EXAMINATION.

ENGLISH LITERATURE.

Meiklejohn, part IV.; Morley's *First Sketch* (Elizabethan Period); *Paradise Lost*, Bks. I and II.

FRIDAY, JUNE 4TH :— 9 TO 12 A.M.

1. The same as question 1 of the Ordinary paper.

2. Sketch the life of Shelley and notice his works.

3. The same as question 3 of the Ordinary paper.

4. Give a brief account of the rise of periodical literature in England. Name famous historians of the eighteenth and nineteenth centuries and one historical work of each.

5. Give some of the chief arguments advanced by John Knox in his *First Blast*.

6. Give an outline of the First Book of the *Faerie Queene* and describe the Spenserian stanza.

7. Make out a list of Elizabethan dramatists, excluding Shakspere and Ben Jonson. Name a play of each. Describe one of the plays you have mentioned.

8. Make notes on Francis Meres; Du Bartas, *Virgidemiarum*; *Answer to the Petition of Mr. Travers*; John Florio; *Barons' Wars*; *Kind Hart's Dream*; *The Art of English Poesie*; *Astrophel and Stella*; Arthur Golding, *School of Abuse*; E. K.; *Steel Glas*; *Tottel's Miscellany*.

9. In what connection are the following allusions made? Explain them. Alcides, Ternate, Aonian Mount, Argo, Syrtis, Leviathan, Caspian, Etna, Ternate, Fesole, Danaw.

10. Describe the various ways in which the fallen angels spend their time after the Council is disbanded.

11. Describe the building of Pandemonium, and as you do so introduce as many of Milton's allusions as you remember.

12. State how Milton describes—

(*a*) The width of the gates of Hell.
(*b*) The size of Satan's spear.
(*c*) The applause of the assembly after Mammon's speech.
(*d*) The magnificence of Satan's throne.
(*e*) The dense thronging of the fallen angels in Pandemonium.
(*f*) The innumerability of the fallen angels in Hell.

If you were asked to give proof of Milton's (*a*) vagueness, (*b*) his use of military knowledge, and (*c*) his use of nautical terms, state as briefly as possible to what parts of the first two books you would turn.

ADVANCED A. A.

BOTANY.

FRIDAY, JUNE 4TH :—AFTERNOON, 2 TO 5.

1. State what you know of buds and their use.

2. Describe a typical leaf, and note the chief modifications of this organ.

3. Write a brief account of the modifications of flowers, (1) as to adnation, (2) as to chorisis, giving examples.

4. Describe a dicotyledonous seed, and the development of the embryo from the seed.

5. Name and define the varieties of determinate inflorescence, and give examples.

6. Write a full account of æstivation.

7. What is a fruit ?
Name and define the chief varieties, and give examples.

8. What are the principles underlying a natural system of classification ?
Give an outline of such a system.

9. Describe and classify specimen (1).

10. Describe and classify specimen (2).

Examiners will please supply each candidate with specimens of wild-flowers belonging to two families, taking care that all parts of the plants are present.

ADVANCED A. A. EXAMINATIONS.

ORTHOGRAPHIC PROJECTIONS.

MONDAY, JUNE 7TH :—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. Find the plan and elevation of a cube of 1.5 in. side, when one face makes an angle of 30° with the horizontal, and a diagonal of that face is horizontal and at an angle of 45° with the vertical plane.

2. A square prism, 3 inches in length and of 1 in. side, stands with its axis vertical and its faces inclined at 45° to the vertical plane. The prism is penetrated by a cylinder 3 inches long and of 1.3 in. diameter which has its axis inclined at 30° to the horizontal. The axis of the cylinder bisects the axis of the prism.

(*a*) Develop one end of the cylinder and the whole surface of the prism. (*b*) Obtain the vertical projection of the lines of penetration when the plan of the axis of the cylinder is at 45° to the vertical plane and the axis of the prism is vertical.

3. A cone having an apex angle of 60° is met by a plane inclined at 45° to the axis of the cone. The plane meets the axis at a point one inch from the apex.

Find the section caused by the plane.

4. A pyramid (tetrahedron) having an equilateral triangle of 2 in. side for base, and the sides of which are also equilateral triangles, is placed so that one edge is in the horizontal and the plan of an adjacent edge is at 45° to the vertical. Find the plan and elevation.

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